The Dental Digest.

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Original Contributions.

SUGGESTIONS ON DEVELOPING AND CONDUCTING A DENTAL PRACTICE ON BUSINESS PRINCIPLES.

By J. N. Crouse, D. D. S., Chicago.

(Continued from page 131, No. 3, Vol. 1.)

In our third article in the March number of the Digest we discussed diagnosis and prognosis quite fully, described the methods to be employed for the first few sittings, and showed why patients should pay just as well for this preparation as for the actual operations.

If the human race had all the money they needed and those requiring dental services were willing to compensate for the same when properly performed, practicing dentistry would be a very enticing occupation, but the conditions are altogether different from this. First, we have those whose means are so limited that to pay for the best dental service is a very great hardship. Second, we have those who have the necessary means, but from a lack of appreciation or education in this line are unwilling to pay the compensation that good services should command. Third, we have those who have the necessary means and are willing to pay a fair price for good services. A large proportion of this latter class are those who have been educated by the dentist—having come into personal contact with professional men who have taken the trouble to explain this question of proper compensation for good professional services, and have given them the appreciative understanding of their duty in this respect. Naturally they are the desirable patients, for, so far as we know, dentistry is practiced not as a recreation, but as a means of liveli-

hood and for the compensation it yields. For while there is a fascination in the practice of dentistry, this is very largely increased by the knowledge that your services are appreciated financially.

To the practitioner who already has all he can attend to of this class of patients this discussion would not be of much interest, were it not for the fact that everyone necessarily comes in contact with a class whose means are limited, many of whom are among the most intelligent, appreciative and agreeable patients for whom we are called upon to render service. How can we serve this class to the best of advantage, and who cannot see the advantage in rendering service to the intelligent and appreciative? Many of the best paying patients come to us through those we have served who may not have been able to give us what we called our full fees. To the young man let me say be careful that you do not turn away those who may be your best aids if you give them your very best service. Make sure that you serve them to your best ability if you serve them at all. If, on the other hand, our time is fully occupied with a practice that commands our full fees, we should employ a young man who, aided by our counsel and judgment, can render good service. In this way good is done in several directions. For instance, there are many young men who have not had the long experience which is absolutely necessary to a complete dental education, but who under direction can render good service. On the other hand there are numerous patients who are not able to pay what the full time of a first class dentist will command, yet who wish his judgment and supervision and are willing to have the assistant carry out any plans the dentist may adopt. They are thus well served, and at much less expense than if he had carried out all his plans and performed all the operations with his own hands. In fact, this plan can be carried into practice to advantage, not confining it to those whom we call limited in means, for dental services when well performed are very expensive and are rather a heavy tax upon the average individual's money resources; especially is this true of a parent who has a family of children with average constitutions. Each child requires more or less service and many times more than less; then if the family is large the expense for good dental service is a great expense, especially if all the work is per-

formed by only those who have the necessary qualifications for first class dentists. For the reason that a first class dentist who has had sufficient experience and the various qualifications as enumerated in our first article, can always command good fees if he has the determination to do so. Hence when his ability becomes known his time will command high fees, in which case he can lessen the expense to the community he serves, increase his income, and give his patrons better service by employing a competent young practitioner to assist him. This will enable the latter to acquire the necessary means, information, and experience, and if he is made of the right kind of stuff he can open an office in a few years for himself—this is one of the ways in which this course does good. Another is that honest, worthy people who have not a great abundance of money can get first class service and not be so taxed as they often are, when they are obliged to go where they get neither skill nor honest service. And still another and even more important reason than the others named is the benefit that a more varied occupation gives to the practitioner himself, for if there is one thing more than another that an honest, hard-working dentist needs it is variety in his occupation. Where one stays by his chair wrestling and contending with nervous and unruly patients, filling teeth the greater part of the time, doing all the detail work himself and thinking of little else, it is only a matter of time when a broad intellect must become narrowed. This only varies in degree in proportion to the closeness of the confinement, and can surely be set down as one of the chief causes of the lack of growth in the individual practicing dentistry. So we contend that all practitioners will render better service by having others to perform a fair share of the numerous operations, and by their doing the thinking out of the best methods to adopt in each individual case. This requires much more ability, a capacity to think and reason, some system of bookkeeping, and a considerable variation of occupation; and it is this which adds to our growth. Making our opinions worth something enables us to conquer instead of being slaves all the time.

If you are so situated that you cannot enlarge your occupation by employing assistance, occupy your spare time in some way that will increase your growth, which of necessity will enlarge your manhood and enable you to do better work, get better

patrons and increase your happiness. If you have not already done so, join with us in our battle for freedom, but we must not dwell on this topic longer.

We have another class of people to deal with which we described as those who have plenty of money but who have not the proper appreciation of what professional services are worth. To the treatment of this second class we will give our especial attention at this time and see if we cannot educate them to a proper appreciation of our services, a part of which must necessarily be done as we proceed with the operations. In years of practice we have from time to time come in contact with many of this class and have generally succeeded in improving their education in this respect—some of the least appreciative becoming in time our most valued patrons. If we are serving the head of the family, who is to pay the bill, and can make him understand from time to time as we proceed, what we are doing and what we shall expect of him in the way of compensation, the education is more easily instilled.

It has been our rule when new patients apply for services, after making the diagnosis of what is to be done, to ascertain whether or not they understand what the fee should be and were willing to properly recompense our efforts. If they have been in the hands of a dentist before and the result shows that good services have been performed, the natural inference is that they already understand something at least of what a dentist's services are worth. On the other hand, if there has been no considerable amount of work done, or what you see indicates it has been of a poor quality, it is fair to presume that they have not paid the fee that good services will command, and in such cases we always discuss at the proper time, and early in the proceeding, the kind of services needed and the compensation for such. You can prepare a cavity and fill it before discussing these questions, or after the cavity is prepared discuss the material to be used, which gives a good opportunity to force a discussion of fees. We say force, because sometimes it is not an easy matter to get a patient to enter into a discussion, especially is this so with a large class of what are termed shrewd business men, they preferring to have the financial battle after the services have been performed, not on account of their lack of money but because of a disposition to

bully the operator, and they adopt this method to escape their share of the contract. We know of no better way with this class of patients than the discussing of the subject at various times when the services are being performed, so that there may be no misunderstanding as to what our demand for remuneration will be. When, however, we are serving the children and have not come in contact with the head of the family, the question is more difficult, and is likely to result in unpleasantness afterwards. To avoid this we send for the parent, after ascertaining which side of the family runs the finances, and discuss the question soon after the services have been begun. This many times requires constant repetition and sometimes a visit to the house, and we prefer to have the responsible person come to the chair with the child to see what we are doing and to appreciate the time being given in these services, and at the same time to have an understanding of the methods and materials being used; we forcing if needs be a consultation, when of necessity the question of expense and remuneration naturally come into the discussion.

To conquer in this struggle for our rights requires that we have a proper appreciation of our worth. We must first be able to perform or render good service, then be sure we have correct ideas as to the value of professional service. For if we ourselves are mere mechanics, only counting on what it is worth to 'stuff a cavity,' we are sure to be conquered and allowed pay accordingly. Professional ability to diagnose any case properly, the power to reason what this or that course if adopted must lead to, and the being able to give advice or perform any kind of operation, is all essential when educating the unappreciative.

We are well aware that it is impossible to give estimates or definite figures beforehand as to the cost of dental operations, but in a case where means are limited some information is absolutely necessary, if any considerable amount of service is required. Also in cases where money is not limited, it is many times much better, when the patients are not familiar with the expense necessary, to familiarize them as the work progresses; but we must postpone any farther discussion of this question until our next article.

(TO BE CONTINUED.)

MECHANICS IN BRIDGEWORK.

By Emory A. Bryant, D. D. S., Washington, D. C.

Outside of general pathological conditions, which must be taken into consideration in operations of this description, certain mechanical principles and demonstrated facts are the real basis upon which such structures must be made if a reasonable success is to be anticipated, the abandonment of which means ultimate failure in the majority of cases. That these mechanical principles are not always the base of the construction of dentures of this description is very easily proved by the illustrations of various cases presented to the profession through the medium of our dental journals, as well as by books published referring specially to this branch of the dental art. To the eye of a mechanic, they do not even need practical demonstration to condemn them *in toto*. That they are not all failures is not the fault of the construction, but due to "favoring" the appliance upon the part of the person wearing the denture, or absence of antagonizing teeth, in both instances relieving the structure from the strain it should be designed to undergo.

In order to give a clear idea of the points involved, I shall be compelled to divide the subject into two classes: First, permanent or immovable; second, removable (so-called) bridges.

In the first class, we have a beginning with the Low bridge, followed by that of Richmond, and concluding with the numerous modifications of these two. In the second class the beginning was so remote and gradual in its development as to make it impossible to give its inventor or even surmise the same. While its transformation from a simple "plate" into a so-called "removable bridge" is of more recent origin, its author has become so effectually obscure that it is very doubtful if he will ever be resurrected.

Bridgework in dentistry is the building of an artificial denture *over* a space from which the natural teeth have been extracted, to teeth or roots of teeth remaining in the mouth, using the same as abutments therefor, depending upon the abutments for its stability and position, and not upon the gum or tissues beneath. All classes of so-called bridges not filling these requirements are not bridges in the true sense of that word, and should not be classed

as such. Artificial dentures of any description held in place with clasps or bands, by slots or gibs or modifications thereof, the body of which depends upon its contact with and upon the gum for its stability or support, is not a bridge, but merely one of the many forms of plates. Bridges should not be confounded with these plate forms, nor should the failure or success of this class of work be attributed to bridgework, but relegated to the plate family, where it belongs, to live or die by comparison with and in its own household. By placing this dividing line between plates and bridges we are able to give to each its true value and defects, its successes and failures.

In the immovable structure we have and always will attain the best results, from the simple fact that it is not only immovable itself, but it retains its abutments in an immovable position, distributing any unequal strain brought to bear upon it in any direction, equally upon all its abutments. Lateral strains are the most to be feared, and are what destroy the abutments, should they not be strong enough. A bridge extending from the wisdom, or the twelfth year molar, to the first bicuspid or cuspid, unless favored by an unusual bite of the antagonizing teeth, will almost invariably fail, the abutments becoming loose under the lateral strain, while if it extends beyond the cuspid as far as the central incisor or farther, these latter abutments serve to break the lateral strain, and such a bridge, properly made and articulated, rarely fails. This same fact is demonstrated in bridges of a full denture attached to only four abutments, viz.: two cuspids and a molar on each side of the arch. In case the full denture is attached to a wisdom tooth on each side in the superior arch, it is best to solder in a piece of iridio-platinum plate, fitting and slightly imbedded in the tissues across the roof of the mouth and soldered to the wisdom crowns, making it stiff enough to thoroughly brace the bridge at this point, so that any lateral strain will be distributed instead of concentrated upon one side or the other. This is of course impossible where the denture is in the lower jaw, but it must be arranged for by strengthening the denture at its arch from cuspid to cuspid and where the bridge joins the arch at the cuspids. Perpendicular strain has no ill effect upon the abutment crowns whatever if these abutments are firm when the bridge is inserted. I make no exception to this

rule as regards the strength of the different jaws met with, since nature always provides strong teeth in jaws of massive strength. You will notice how plainly this fact is shown in cases of excessive abrasion, the "bite" being square down, and the greater the abrasion and the shorter the teeth become, the stronger they are found to be imbedded in the sockets. In these cases the lateral strain is removed altogether, or nearly so, and nature resists the perpendicular strain by strengthening the sockets. The only reason that can be advanced for the "give" or slight motion which can be detected in the fully developed teeth, and which movement is at times used as an argument against the immovable bridge, is that the lateral strain is neutralized by this slight cushion action, the teeth returning to their normal position the moment the strain is removed, and that it is nature's brace and one which must be duplicated by mechanical means whenever these teeth are replaced by artificial substitutes. If we look after the lateral strain on the abutments used, nature will take care of the perpendicular. This statement is borne out by the fact that a loose tooth used as one of four or five abutments in a bridge, and securely held quiet, all lateral strain being removed from it, although it is subjected to the same amount of perpendicular strain as the other abutments, it becomes as firm in its socket as formerly in its normal condition, and even more so. Did not nature have this power of resistance, the greater strain always being perpendicular in the process of mastication, this loose tooth would become more loose, and by not giving resistance at this point the leverage would be so great that it would cause the bridge to tilt. Or, in other words, to have the same action as is found in the case of the abortions called "extension bridges," the extension acting as a leverage and virtually pulling the other abutments out of their sockets, distributing a lateral instead of a perpendicular strain to these abutments, thus accomplishing the very result we have to guard against mechanically, though in a different direction. Nature endows the parts of the body only with such strength of tissue as is required to allow normal action, giving no organ more than is needed for the function it is designed to perform, but endowing each part with a certain reserve force with which to resist abnormal action to a certain extent, as well as to be abnormally

developed in certain directions, as in the case of the athlete, the artist, the sculptor, the mechanic, and I might add, the dentist. The whole structure of man, so far as the articulations of the bones of the body, limbs, head, and feet are concerned, in their normal condition, is built upon the very finest of mechanical lines, as well as are the "braces," the muscles, and each and every part is endowed with reserve functions for the resistance of undue strain upon any part, and all we have to do is to study these mechanical effects and take advantage of them and success will attend our efforts. Systemic causes of failure I am not dealing with, as that applies to everything and has no especial relation to bridge-work from a mechanical standpoint.

With these mechanical facts to judge from as well as a personal experience of eight years with immovable bridges, I am compelled to take the position that it is mechanically the "artificial denture par excellence" when properly constructed and inserted, due care being taken for the strength of the parts and materials used and their relations to the tissues, and for all lateral strain, as nature will care for the perpendicular when required. If these mechanical principles are always followed, failure of immovable bridges from mechanical reasons will be an impossibility, leaving only bad cement, faulty insertion, systemic causes, and improper care by the patient in not keeping it clean, to be contended with, and failures of this kind pertain not only to bridge-work, but to every operation known to dental science.

Remarks on Foreign Bodies in the Pharynx and Œsophagus.—Fish bones and pins are liable to be caught in the pillars of the fauces, or in the tonsils, or may be fixed transversely across the pharynx. They cause much pain in swallowing. In these cases it is best, if possible, to try to search for the foreign body by the laryngoscope, and then to grasp it by suitable forceps or by the finger nail, while the pharynx is illuminated. This is a safer method than the plan of feeling for it with the finger without a light—and risking its passing down into the larynx. The tongue must be well pulled forwards with a sponge cloth and the patient induced to continue breathing regularly, after first drawing a long breath. If the object is beyond the reach of a curved forceps or of the finger, it may be removed by the expanding horse-hair extractor or coin-catcher. If these methods still fail, first without chloroform and afterwards with its use, then it is necessary to perform pharyngotomy.

J. C. Howie, in Glasgow Medical Journal.

TITLES.

By W. H. Duddy, D. D. S., Boston, Mass.

From daily conversations with dentists, and from reading the articles published in the periodicals, I cannot help being impressed with the idea which seems to be prevalent in all quarters; viz: that it is a necessity and an honor to have the degree of M. D. attached to our names, as well as the degree possessed by all graduates. As far as the honor is concerned, it may in some slight degree add to the prestige of a few dentists, but it does not to any appreciable extent contribute to their ability as skillful manipulators. As to the necessity of such a degree, it is impossible for any sane man to think for a single moment that it adds one iota of skill to the dexterity of his fingers, or makes keener his vision, two indispensable things to all successful dentists.

I presume that the idea becomes deeply rooted in our minds during our collegiate course, because at that time so much stress is laid upon the desirability of having a passable knowledge of several medical branches, that the main object disappears from vision. It is far from my intention to belittle any proper education, but I do most strenuously object to students being saturated with the false idea that the profession which they have spent their valuable time to acquire, is dependent upon any other for recognition. Such a position is a confession of weakness, and should not be tolerated by any conscientious man. Dentists should learn to depend on themselves, for when they understand thoroughly and can perform skilfully all dental operations, their standing as the peers of the members of the medical profession is assured.

HINGED SADDLE.

By A. J. Stevens, D. D. S., Los Angeles, Cal.

Within the last four years I have placed in the mouth what I call a hinged saddle, and it works so nicely I will give a brief description of it.

In one case the patient had superior right second molar and cuspids; the left molars and bicuspids being out. I put in a bridge

and on posterior side of cuspid crown soldered the one-half of a hinge, the other half I cemented with a tenant made of silver, which tenant I covered with a close fitting case of silver, all of which (tenant and case) was in shape of a truncated wedge. About the middle of this tenant and case I drilled a hole to admit a small pin to eventually pass through the rubber, which held the teeth to the gold plate saddle, and the wedge. After the bridge was set I fastened the truncated wedge, which was united to the second half of the hinge, to the part of the hinge soldered to the cuspid crown; then placed the saddle on gum and with a little metal wax united the wedge and plate, pulled the hinge pin and removed so the pins could be more strongly united with wax preparatory for the impression.

I first made two wooden pins about three-quarters of an inch long—one to answer for a hinge pin, the other to pass through the wedge part—and when all was in place I took the impression in plaster, and when hard, pulled the hinge pin and removed. This was now ready for investing material, and when hard I cut away the impression plaster and prepared for soldering the tenant case to the saddle plate. Before soldering I pulled the wooden pin and slipped out the tenant and then invested, and soldered with 14K solder. When soldered, I cleaned and put back the tenant and pin, placed in the mouth as before and took a bite, then the impression for setting the teeth. A little cement was needed to close the openings to tenant case so the rubber would not fill it when vulcanizing. I let the first bicuspid press snugly against the cuspid crown so that when the pin was in, the saddle rested snugly against the gum. The tenant pin with a head is to be drawn when the saddle needs to be removed for cleaning, etc.

MOUNTING LOGAN CROWNS.

By J. W. Heckler, D. D. S., Buffalo, N. Y.

For the central and lateral incisors it is preferable to mount the crown without a band, and my method is to prepare the root in the usual way, but to cut the labial side just a little beneath the gum margin, leaving the palatine portion as long as the judgment of the operator dictates. Select a crown that will not need any

grinding on the cutting edge or the sides to make it fit, as it always impairs the beauty of a Logan crown to cut the surface. Also be extremely careful to select a crown with a neck similar to that of the root. This being done, grind the crown to as perfect an adjustment to the root as possible, taking care not to grind the platinum pin, as it would materially impair the strength of the crown. If the end of the root has been properly treated and filled, it is now ready for the final adjustment of the crown.

Take non-cohesive gold foil no. 4, fold it from 80–100 thickness, punch a hole in the center with a dam punch large enough to admit the pin, place the pad of foil on the crown, trim the ragged edges almost to the sides of crown, remove and place some thin cement in cup of crown, put pad back in place, tilt patient so the cement can be placed in root canals and all the air be expelled, otherwise the air acts as a cushion and keeps crown from going to place. All this being accomplished, place the crown in position, put a soft pine stick on the cutting edges of crown, and give a few sharp raps with the mallet to drive out all surplus cement and to condense the foil. Keep the crown firmly in place for a few minutes to prevent any movement, and it is advisable to have the patient remain a half-hour to allow the cement to thoroughly harden. Then burnish the gold foil hard around the joint and finish with disks and strips as you would a filling.

A crown set in this way does not show any cement whatever, and it makes a more perfect joint than is possible by any other method. It leaves no shoulder for the lodgment of food, is perfect in shape with the root, and hermetically seals the joint.

Children suffer from various kinds of aches which it is not always easy to understand. Earaches, toothaches, faceaches, headaches, all visit them at various ages. A dentist who has examined the teeth of a large number of children finds that the age of toothache is from seven to twelve, and of 3,145 children examined, only 707 had quite sound teeth, and those with imperfect teeth had defects which, without correction, would have led to permanent injury as well as to disfigurement. In this age when every organ and part of the body is receiving attention, the teeth should not be forgotten and the children's mouths should be regularly inspected by a competent and honest dentist.—*Pop. H. Mag.*

Digests.

Proceedings of Societies.

The Chicago Odontographic Society held its regular monthly meeting April 8, 1895. Dr. J. H. Smyser read a paper on "Higher Dental Ethics," a digest of which is as follows:

"A sufficient number of propositions or principles of Ethics are universally accepted by enlightened society to form a firm basis for the Doctrine of Ethics—the highest and noblest branch of speculative philosophy. Few indeed are the men who would attempt to controvert any part or parcel of the doctrine contained in the simple injunction, "Do unto others as you would have others do unto you."

It is in the practical application of Ethical principles to our every day practice where the "faith that is in us" is put to the test. This point is well illustrated, I think, by a discussion between a French Professor and a group of his young countrymen. The professor was an instructor on Ethics. He had previously attempted to ground his disciples thoroughly in the doctrine contained in the injunction "Love thy neighbor as thyself." It was review day and he was questioning his class closely in order to test their ability in applying its teachings to practical affairs of life. The answers of the students came promptly; they showed a high degree of advancement in ethical training; there was no halting, no faltering, no misjudgment; finally came the question, "How should the French as a nation feel toward the Germans as a nation?" Here was a poser. The wheels of progress were blocked; silence reigned everywhere. It was a case where inclination and plain duty clashed. Certain images of Alsace and Lorraine began to float before the young Frenchmen, and here began a series of specious modifications and exceptions supposed to free the French from the operation of a plain law. And this picture is a type of the difficulties that beset men everywhere, and in all walks of life. It is the unswerving application of plain rules to the practical affairs of life whatever our own inclinations are, that give rise to doubts and difficulties.

In order to avoid the many undesirable infractions upon the code of ethics we must endeavor to improve our institutions of learning—to do this more time and attention should be devoted, and greater care observed in making good honest impressions upon the student, affecting the character of the professional life he is about to lead.

Is it not true that in art, business and the professions students follow the general style of their instructors, or the institutions in which they secured their education? We believe that the greater fault lies in the fact that most of our so-called colleges are conducted in too great a measure as a money making medium—and since as a rule the men on the higher rounds of the ladder in the profession are the ones usually connected with those institutions, either as directors, or faculty, they are responsible for the way in which that institution is conducted.

To the same fact may be added the inability to obtain any satisfactory legislation in the way of giving authority to corporations to grant license to individuals to practice dentistry.

I hope each one here tonight will become interested enough in this subject to formulate an answer for himself.

A few of the colleges are without a doubt attempting to improve these conditions—endeavoring to impress the students with the fact that they have some honesty of purpose, and aside from giving them the best possible instructions upon the theory and practice of dentistry are also inculcating principles of a higher character satisfying the requirements of the honorable practitioner.

Advertising in its various forms seems to be the leading evil, to which men resort to lower the standing of the profession. It is not necessary to enumerate the different forms used by each individual—since unlike conditions and circumstances demand a style peculiar and suitable in each case to make up the deficiency. All alike are obnoxious and dishonorable, the main object being to deceive. Whether through the public press, programmes, or gay streamers hung up in public places, they all have the same purpose in view, and the same unprofessional effect in the end. The higher the standing of the individuals the greater harm is done.

Take as an example a student at college often writing out the

time for an appointment with a patron on a card on the back of which is printed the statement that "we charge for material only," and after the patient returns and has a tooth filled with amalgam, a charge of $1.50 or one dollar is made. What a volume of ethical culture goes with such a transaction, what a feeling of honesty there is in it; and then that same student goes down town and drops into one of the hotels and there on a post he sees the name of one of the faculty on a silk ribbon telling where he may be found during certain hours. This of course is to convey to the unwary stranger the fact that his name being on the nice yellow ribbon would be a more desirable place to receive professional services than across the way where the portraits of those many nice looking men with the stylishly trimmed whiskers are placed on a bill board.

No credit or honor can ever be claimed by an institution that turns out young men under such conditions, though a few may reach the highest pedestal of fame and from the time they leave its portals their march is upward and onward, elevating whene'er they can the solid mantle of our code by honesty and integrity.

I am a firm believer in the saying "that the sins of omission are as great as the sins of commission." We should reach the highest perfection in our better colleges and wipe out of existence those which are conducted only for pecuniary gain, and not for dental education, and when this is done our attention should be turned to those Augean stables found in all large cities—called dental parlors

If it were not a fact that the eyes of the public were kept in darkness concerning the happening of those places, owing to the bountiful revenue contributed to the daily press, they could not possibly exist.

Think of the Health department interfering with the prayers of Dr. Dowie on ethical exceptions, and allowing the Dental Parlors to flourish unmolested. Here is an opportunity for someone to promote our ethics and at the same time become a benefactor.

Injustice done to the public is not done only by this lower strata of the profession. I believe there should be a limit to values, charging exorbitant prices for services—beyond anything reasonable—by the "long hours"—in many cases it being neces-

sary to resort to law processes in order to collect them, is betraying a trust, or taking unjust advantage of those who desire the best of service, and whose means will not permit of the tax on reputation. Many who have met with this experience will look to the daily papers for rates on dentistry, pass from the sublime to the ridiculous, as it were, overlooking what lies between those extremes.

I do not believe much in technical ethics. Different writers upon this subject draw the line of demarcation between professions too sharply, as in the case of the city dentist accusing the country physician of a breach of ethics because he extracted an aching tooth for his neighbor, or on the other hand the physician censuring the dentist for advising a remedy for the cure of sick headache, or wiping a chunk of soot from a patient's eye. This is not what is meant by professional ethics, but finds its application in the rules and regulations of labor unions. We should be far beyond any such petty jealousness—place our aim higher—show to the world that we are public benefactors—be honest with each other in all our dealings and carry out to the letter what is implied by the Golden Rule."

Discussion was opened by Dr. J. G. Reid.

Dr. J. G. Reid. This question of ethics is largely dependent upon one's individuality—each individual is the architect of his own ethics. Just so long as colleges continue to select men to fill their rooms indiscriminately, regardless of their moral fibre, just so long will they turn out a number of men who will become unethical and unprofessional. Ethics are seldom thought of either by the profession or laity in the concrete. Let us give this matter serious thought, let us induce others to think of it, for out of this thinking some good along the line of the Golden Rule will come to both layman and dentist.

Dr. Krause. In the old country professional schools are maintained by the government and the practitioner is largely governed by a set of rigorous rules, making it practically impossible for such exhibitions of unprofessional conduct as are seen in this country.

Dr. H. A. Gunther. I am sorry to be compelled to make the acknowledgment that from my observation the standard of den-

tistry in other countries than ours from an ethical standpoint is higher, and I sincerely hope this condition will be changed.

Dr. Nyman. Ethics is a rule of conduct embracing in its teaching honesty, dignity, refinement, and above all the application of the Golden Rule. The non-ethical compared to the ethical man stands as the artisan does to the artist. The former has no interest in his profession save what monetary gain he can get from it—the latter gives to it his best thought and his soul. In our present condition in this city I think we are sadly in need of a Dr. Parkhurst in the profession. We are in need of more competent legislation against some of the evils which have a vigorous growth among us. I believe it possible for the better elements of the profession to unite and wipe out the many cesspools of infamy—such as some of the advertising dental parlors —which flourish in our midst.

Dr. E. Noyes. So far the discussion has only assailed that violation of ethics to be found in advertising. I believe that any person who has promised to write a paper for any dental society and fails to so do without a proper excuse to the society, violates the code of ethics and should be expelled without a trial.

Ethics relate to morals, and I do not believe that a code of ethics should exclude a skillful, honest man.

It depends upon the moral fibre and strong character of the man whether he be ethical or otherwise in his profession. Colleges should be careful concerning the moral quality of the pupils they receive and continue in the school.

Dr. Ewing. In the face of stupendous opposition and odds in our professional battle I believe the young men who are striving for a practice and still living up to our code of ethics are deserving of commendation.

Dr. Coltrin. I have heard a good deal concerning the written code this evening but little or nothing has been said concerning those little ethical things too small to be written but which go to make up one stupendous whole.

Dr. C. N. Johnson. In considering the subject of dental ethics I am convinced that the highest essence of ethics relates not so much to the printed code as to the unwritten law of ethics which should govern us in our daily relations with the profession and the public. As an illustration of what I mean I will relate an incident that

occurred in my office today. A lady applied to me last week requesting me to make her an upper plate, saying that she had been wearing one made by Dr. ——— (a member of this society), but that it had broken and she wanted a better one. I asked her to bring the broken plate to my office and she did so today. I examined it and found the workmanship on it good. I at once referred her back to the dentist who made it, telling her that she was misjudging the quality of his work, and assuring her that he would deal justly with her. If, on examining the plate for the lady today, I had discovered evidence of gross carelessness or incapacity on the part of the dentist, I should not have hesitated one moment about accepting the patient and doing her work. We are under fully as great an obligation in this respect to the patient as we are to the practitioner. A perfectly honest and gentlemanly dealing with both parties constitutes, it seems to me, the highest dental ethics.

Dr. F. H. Zinn. Ethics hinges upon honesty—it largely depends upon the character of the individual as to his ethical bearing. To raise our profession to a higher ethical standard we should be in harmony with all the impulses that look to that end. We should not block legislation for the betterment of our profession simply because we are not the framers of the bill.

C. E. Bentley. I am encouraged because I know such discussions as these are helpful. The college and the society are the ethical incubators; a man may have a strong moral bias, but if he sees his school doing the very thing he in the lecture room has been taught not to do, he is likely to follow the path of his school. Societies should have these discussions often. They make us think of ethics in its concrete form; remind us of those many unwritten things which form so important a factor in the whole equation; and keep before our eyes the duty we owe to our fellow-men, fellow-practitioners, and to ourselves.

The Dental Review for March, 1895.

"Dental Amalgams, Their Uses and Abuses," by A. C. Hewitt, D. D. S., Chicago. Dr. Hewitt in writing on the above subject says,—Dental Amalgams have their uses, and are also much abused. No dentist of ability and experience will question the veracity of either statement. The abuse is widespread, and is to

be found among the rich and educated, as well as the poor and ignorant. There seems to to be a "Boston Rubber Conscience" governing the dialectics of many dentists when they reason upon this subject—e. g.—some years since I visited the office of a leading dentist in a neighboring city. A lady came in to have a tooth filled. By a few strokes of an excavator, not even drying the cavity or using an antiseptic or rubber dam, a lower molar was prepared for filling. He amalgamated some alloy in the palm of his hand, and "stuffed" the amalgam into the cavity, wiping away the surplus with his thumb. The patient paid the required fee and went away. I then inquired, "Do you not use the rubber dam in filling with amalgam?" "Oh, no," he answered, "I just hoe out the cavity and slap in the amalgam." I replied, "But such a filling will last only a short time." "I know it," said he, "but she will come back and I will get another fee." Other cases of a similar nature were cited. We all know that a large majority of amalgam fillings are faulty, but by no means are they necessarily so. The fault does not lie in the alloys, but rather in the amalgamation and manipulation; in the lazy, shiftless, dishonorable, and dishonest workmanship. There are honorable men in our profession, whose daily and yearly work prove what I say. Prof. A. O. Hunt gave an unanswerable argument in favor of the use of amalgam, and an object lesson of its abuse, when he once demonstrated in clinic that no more free mercury could be brought to the surface of the filling. He also demonstrated that if the excess of mercury were removed and the mass packed with uniform density, and allowed to crystallize in that position, no speroidal tendency would be manifested. These results could not have been produced without the use of the rubber dam, hence one of the abuses in the use of amalgam, viz, "submarine working." And another is the amalgamation of the alloy in the palm of the hand, which is oftentimes quite moist, thus increasing the porosity of the amalgam and rendering it less capable of barring out the oral fluids. I am an enthusiastic advocate of gold as a filling material, other things being equal. Oftentimes for various reasons amalgam seems preferable, and when used demands skill and honest endeavor on the part of the operator. To my mind there are certain teeth and classes of cavities that need something different from amalgams in general use.

This element is copper, which is the only metal used in alloys that possesses therapeutic properties. A filling should be both a stopping and a remedial agent. Believing myself right in these ideas, about ten years ago I began the manufacture (for my own own use) of a copper amalgam, the formula of which has been published in the *Review*. It seems to be improved by age, and of late I have used only that made a year previous. I place this amalgam second only to gold as a filling material. The usual objections to the use of copper amalgam, viz: cupping or washing out on the occluding surfaces, discoloration of the tooth structure, and also of contiguous gold work, do not occur in the use of this amalgam when worked as I shall describe. Having prepared the cavity, asepticised and dried it, I flood the tooth with the following—

Alcohol (high proof)	oz. ij
Beta Napthol	grs. x

If softened dentine is to be retained, I dry the cavity thoroughly with hot air, then coat it with a varnish prepared as follows—

Dammar Varnish	
Sandarac Varnish	aa oz. ij
Alcohol	oz. j
Beta Napthol	grs. x

This is principally to furnish a sticky base upon which to burnish the first layer of amalgam. To prepare the amalgam for filling at least twice the quantity necessary to fill the cavity should be taken. Place this in a steel spoon, and hold it over a spirit lamp flame till globules of mercury appear, removing from the heat just at the point at which the mercury begins to vaporize. Place the heated ingot on a hard maple block with smooth surface, crush and triturate with the convex side of the spoon. This process may be facilitated by rubbing with the ball of the finger, the latter being protected with a leather "hut." The amalgam should never be rubbed in the palm of the hand because of the moisture and oil present. Neither do I favor trituration in a mortar because of the liability of stripping the crystals of copper of their covering of mercury. Then a small particle of the amalgam is placed in the cavity and with a smooth-pointed plugger is burnished thoroughly against every portion of the cavity walls. This

is easily accomplished because the varnish catches the crystals and holds them under the burnisher. If the cavity has been thoroughly sterilized and dried, and the burnishing thoroughly done, a layer of varnish and amalgam will be pressed in and upon the dentinal tubules and enamel impervious to moisture and beyond which no salts of copper can be precipitated to discolor the tooth. The excess of mercury is removed from the remainder of the amalgam by thoroughly squeezing it in strong muslin or chamois skin with a pair of strong pliers. This leaves it in dry hard chunks. These are thoroughly packed in the cavity and against the walls, and the matrix, if one is used, by means of a small smooth-pointed plugger. The surplus mercury resultant upon condensing the amalgam, is absorbed with small pieces of No. 2 Watt's crystal gold, heated in an alcohol flame as for annealing. With a rounded smooth point, the filling is burnished to the desired surface, passing the instrument from the centre to the walls and over the margins. Then the filling is coated with sandarac varnish, before the dam is removed, to thoroughly protect it from the moisture. At a subsequent sitting the filling is smoothed and polished. In conclusion I wish to emphasize the necessity for careful painstaking work, absolutely excluding moisture. For submarine work copper amalgam outstrips any other in preservative qualities, but the filling and tooth will become discolored.

"Local Anæsthesia," by O. A. Weiss, D. M. D.; read before the Minneapolis Dental Society, Nov. 21, 1894. Modern general anæsthesia has been known for about fifty years, and has proven itself to be of inestimable value in surgery, yet owing to the degree of uncertainty attendant upon its use, and its action upon the nerve centers of the most vital functions of life, efforts have been directed toward the localization of anæsthesia, acting only upon the part to be operated upon, and allowing the functions of all other parts to proceed in their usual manner. One of the earliest agents used for the production of local anæsthesia was refrigeration, for which mixtures of ice and salt were used in early days, and later, atomization of highly volatile liquids. This was satisfactory from the standpoint of anæthesia, but the after results, as well as the application, were very unpleasant. Electricity has also been used as a local anæsthetic. The positive electrode is

placed on the part to be anæsthetized while the negative pole is placed in the patient's hand, beginning with a light current, and increasing gradually as much as can be borne without pain. This is not much used at present. Next, we have drugs, of which the most important are carbolic acid, tincture of aconite, belladonna, cocaine, and some of the essential oils like cinnamon and cloves; cocaine being the most effective.

Its anæsthetic properties were first brought to the notice of the profession by Dr. Karl Roller, of Vienna, in 1884. Cocaine is a dangerous drug, but so are many others which are in constant use, consequently for this reason alone, it should not be banished from our materia medica, as some claim it should be. One of the first things to consider in the use of a potent drug is the dose. 1 gr. is the average maximum dose by the mouth. The fact that *the dose of any drug by hypodermatic injection should not be more than one-half of that given by the mouth*, is overlooked by many, and of course death is caused by an over-dose. Another complaint against the use of cocaine is that sloughing follows its use. This will not be the case if asepsis, one of the first elements in surgery, is carefully observed. A syringe must never be used upon some other part of the body after having used it in the mouth, without first sterilizing the needle, lest that part be inoculated with some of the many bacteria found in the mouth.

Thus excessive doses, and uncleanliness are responsible for a majority of the fatal results of the use of cocaine. As there are idiosyncrasies for cocaine as for many other drugs, in its first use upon a new patient you should begin with the minimum dose, then increase the dose as necessity demands. Next of importance to the size of the dose, is the preparation used. The simpler the formula the better, on account of the incompatibility of drugs. Correctives are only needed when toxic symptoms are present, and then must be given in medicinal doses to be of any value, and must be varied to meet the case in hand; as no one corrective will meet all cases. Paul Reclus, of Paris, who has used cocaine in more than 1200 operations without an accident, uses a simple solution of 2 per cent of cocaine with an antiseptic only. Reclus also says that he believes the so-called toxic actions as reported in many cases are due to emotional causes. He says, "A lady went to a dentist to have a tooth extracted, requesting him to use

cocaine, yet said she was afraid the cocaine would kill her. He filled his syringe with distilled water and injected it; the same instant the patient fell back in syncope. You have all seen similar cases and think nothing of them, yet when a case of this kind happens after using cocaine, you give cocaine the full credit. I have used a simple solution of 4 per cent and an antiseptic for the past two years, with only one case of real intoxication, and sloughing has never occurred. It has been found that the concentration of the solution has much to do with the production of intoxication." He says that 1 gr. of cocaine in a 10 per cent solution may cause profound intoxication, but the same quantity of cocaine in a 2 per cent solution is accompanied with no danger at all. Dr. Cholewa, of Berlin, in a discourse before the Berlin Medical Society, upon infiltration anæsthesia, as he terms it, excited great interest. He does not confine his operations to minor surgery but performs many major operations as well. Out of 537 patients he had operated upon, general anæsthesia was used only 16 times, and then only because of insurmountable fear or hysteria, the personally expressed wish of the patient, or where the infiltration method had failed.

The solution used consists of a 1-10 per cent solution of cocaine, in from 5 to 10 parts of a 2-10 per cent solution of common salt. This makes a solution containing from 1-50 to 1-100 of 1 per cent of cocaine. Do not use any of the patent nostrums in the market, the preparation of which you know nothing. Make your own preparations by obtaining cocaine in the form of crystals or in tablets of definite quantity, dissolve in distilled water, and add 4 or 5 drops of carbolic acid to the ounce of the solution. There are two things to consider in cases of intoxication; to strengthen the heart's action, and to diminish the increased arterial pressure. For the former we have no better drug than digitalis, and for the latter there is no better than amyl nitrite. Cocaine may be used, not only in the extraction of teeth, but also in the preparation of roots for crowns, and when setting crowns where the band passes under the free margin of the gum. In the adjustment of rubber dam clamps, they may be carried to the alveolar process if necessary without pain by the use of two or three drops of cocaine. It may be used in any operation where the soft tissues are involved. The first requisite in using the solu-

tion is a good hypodermatic syringe properly kept. Make the first injection in the most accessible place, and in making each subsequent injection, enter the needle within the border of the anæsthetized area, thus avoiding the pain of a new puncture, always being careful not to penetrate the blood vessels of appreciable size. Children will often not tolerate the pain from the insertion of the needle.

All persons with serious cardiac lesions are unfavorable subjects; also persons of cyanotic appearance. It should be used with caution upon pregnant women. Antidotes and resuscitants should always be at hand. The patient should always be placed in the recumbent position in order to assist circulation. Either alcoholic preparations or caffeine may be administered previous to the injection of the cocaine when the patient appears to be an unfavorable subject.

The International Dental Journal for March, 1895.

"The Relation of Modern Therapeutics to the Practice of Dentistry," read before the American Academy of Dental Science, Boston, Oct., 1894, by Robert N. Greenleaf, M. D. We will contrast modern therapeutics with historical therapeutics, for the purpose of considering what it really is. In early days, medicine passed through a stage which as Brunton says, may be called the "make believe" stage of medicine. Just as a child peoples the woods with goblins and various queer creatures, all real to him, and just as he acts towards these according to his belief, so physicians of olden times persuaded themselves of the reality of their delusions and acted accordingly—while now the attitude towards modern therapeutics is the actual knowledge of the facts in the case. The "empiric" method has given us much of our knowledge of drugs, and is not content with the "make believe" attitude of thought, but values a fact according as it has happened in the same way in repeated instances, even if it does not understand the "why." However, empiricism is not the attitude of to-day—while it is a step in therapeutic progress, it is inadequate. It can not explain and say why other remedies may not act equally well; therefore let your studies be of this modern type of thought, and in the spirit of scientific inquiry. The "make believe" thinker says grape acids are injurious because a certain person's teeth de-

cayed after eating grapes. The scientific student will not be satisfied with this decision, but will inquire into the previous state of health of the person, and will make a study of the case, until he finally comes to a correct solution of the problem. In the study preparatory to the discussions of any of the great topics of your specialty the best and surest results will be obtained by following the scientific train of thought. Pharmacology has revolutionized our knowledge of drugs. Of the several things it has accomplished these stand out conspicuously: 1. By careful chemical examination it has isolated the active principles of many drugs, thus permitting their administration without the accompaniment of inert or deleterious principles. 2. By careful study of the principles thus isolated it has been found possible to produce synthetically similar, and in some cases more potent or more conveniently obtained, active principles. 3. By careful experimental study of the action of drugs on animals, a correct understanding of their action and a degree of exactness of dosage have been obtained, which have placed the therapeutics of to-day to a great extent on a par with other branches of science. An acquaintance with the life-history of the cells of a complex organism, has paved the way for knowledge of this character. However, the therapeutist of to-day has learned that drugs are only one form of weapon which he may use in the battle against disease, and recognizes the strength of others, such as the great importance of his own surgical appliances and operations.

Medicine is classified into two general divisions—those acting *systematically*, and those acting *extraneously*. The anodynes, the stimulants, the cathartics, are illustrations of Division I.

Disinfectants, anthelmintics, are illustrations of Division II. These are again divisible into smaller groups, viz.: *general* and *local*, which groups are also subdivided. We have three representatives of the sub-class of a general action, viz.: 1. Nervines, 2. Cardiants, 3. Nutriants. Each of these sub-classes is divided into its respective smaller groups.

Representatives of the sub-class of locally-acting medicines are some of the astringent drugs, as rubefacients.

The following illustrates how these drugs are studied in order to ascertain their action. Nux Vomica is a drug known for a long time to have poisonous properties. Chemists separated its

alkaloids, strychnia and brucia, made salts of them, crystallized them, and found that they existed in the plant in combination with igasuric acid. Then the physiologist and the pharmacologist took these products, and experimented with them on various animals. These experiments led to the conclusion that strychnia, besides other actions, produces its effects by direct stimulation of the anterior part of the spinal cord. Thus the physician can stimulate the flagging nerves of any organ. With this powerful stimulant, or with atropia, digitalis, or morphia, he is sometimes privileged to stand between a patient's life and death.

The family of antiseptic drugs is one of the groups which is worthy of the dentist's most careful study. We have a long list of drugs which arrest or destroy the activity of the micro-organisms. Besides corrosive sublimate and other powerful germicides, there are a host of others, as the volatile oils, etc. Another family of especial value to the dentist is that of anæsthetics. Every dentist should understand the uses and dangers of anæsthetics, also their indications and contra-indications; otherwise he must be regarded as criminal to dare to use such weapons. Among the most common are nitrous oxide, ether, chloroform and bromide.

The local anæsthetic cocaine is delirifacient as well as an anæsthetic, and is a dangerous weapon, hence most dentists are deterred from using it, for the surgeons have found it capable of inducing a "habit" more treacherous, more deadly, than those of alcohol and opium. Closely allied to the family of anæsthetics are the somnifacients such as opium, and also the antispasmodics such as asafœtida. We will include among them also members of the group of antipyretics, such as antipyrin and phenacetin, which possess anodyne properties as well. The use of these drugs requires the study of underlying physical conditions, for which the dentist has not sufficient time, hence I should advise him, when he recognizes the need exists, to obtain the proper counsel from the specialist competent to give it. The ability to recognize this need comes from the study of the fundamental principles of medicine. Such broader knowledge is to-day considered so desirable that the best dental schools have endeavored to incorporate it among their requirements. Also, I consider a

knowledge of expectorants, sialagogues, and the like, should form a part of his general training. Sialagogues, such as cubebs and pellitory might relieve a toothache, particularly of a rheumatic type, simply by relieving a congestion. Mercury also is a sialagogue as well as an alterative and antiseptic. There are also emetics, cathartics, and anthelmintics, each containing some drug which properly used may relieve much suffering and prevent serious illness. There are astringents and rubefacients, also protectives and absorbents, each group having members especially useful to dentists. I would emphasize the fact that more knowledge is to come, not by approaching it as does the "make-believe," or as the "empiricist," but as the therapeutist is doing, viz.—from the standpoint of the modern scientist. Furthermore, I would emphasize that the therapeutist has ascertained many facts, classified and arranged them for your service, some of which you are using daily, and others which you would find of much value.

"Moderation in Practice and in Statement," by S. G. Perry, D. D. S., N. Y. City; read before the N. Y. Odontological Society, Nov. 20, 1894. In the strict sense of the term, the dentist, as a professional, is very inexact in practice, and also in the tabulation and report of experience, notwithstanding we are repeatedly told we are a very scientific body of men, and that our profession is a very exact one. Conflicting statements are often made in our discussions. Of course there are certain fundamental facts on which our practice rests. Our practice cannot be strictly scientific, as for instance certain filling materials, properly used, arrest the decay of the teeth, but the same materials, improperly used, do not save the teeth for any length of time. Our personality determines largely the character of our practice. To eliminate as far as possible what the astronomers call the "personal equation" is a requirement of the first importance, if we are to lead the scientific life. Science is concerned with facts, not fancies, and he who can discover the facts, and not be influenced by the fancies, is the man whose influence will be felt most in the department of science in which he works; and further, if after becoming certain of our facts, I propose we adopt the cold, careful, accurate langage of science in describing them, then our literature would not be so full of wild statements of opinions hysterically expressed. Exaggeration of

statement may be overlooked in the affairs of the world, but in science, looseness of thinking and speaking is not permitted, and yet in our profession it is common, because we have not yet adopted the accuracy expected of those who lead the scientific life. Words are the tools of the mind. If a man has the scientific training and spirit, his words will be few but to the point. The term 'tooth carpenter' may be applied to some men who are extremely skilful, as well as to the botch dentist. They exaggerate the importance of their handicraft, and confine themselves within such a narrow range, that they lose the larger, wider view, and fail to comprehend the significance of proper dental care. In the human mouth natural laws that cannot be set aside are at work, and about all that can be done after all is to nurse, and help, and conserve, hence I would substitute the dental "nurse" for the tooth-carpenter; however there can be no argument made against the nimble fingers that can produce perfect work when perfect work is really required. There exists in our profession a certain kind of inattention on the part of many, and an unconscious intolerance of all ideas and modes of practice that are not in accordance with their own, so that any who venture to express an opinion must do so at the risk of being misunderstood. Opinions of those who have had long experience have great value, but a man's opinions must not be confounded with his facts—the facts that he reports speak for themselves, and are of value as they are clear and plain, but the value of his opinions will depend upon the combination of mental faculties that make up what we call a level head. I doubt if we ever yet saw a more perfect example of an unselfish man than one who is a true follower of science in the fullest meaning of that term. His love of science will be so strong that his only concern will be to do the true thing, and this will be the right one, and in doing this, he will show that he has the level head before mentioned, and the chances are that the true and right thing will be the moderate one. In dental practice he will not use gold exclusively; on the other hand, he will not assert without a qualifying phrase that it is a true failure. He will not use the plastics without regard to the age of the patient, and the condition of the teeth, and as he grows old himself, he will be on his guard against them because they are easy to use. A young dentist must guard against the over-confidence of youth. He

must also be careful about the extraction of the sixth-year molars, because some one else has said they must come out, and he will be slow in undertaking the regulation of teeth that in a few years will regulate themselves. Neither will he condemn as bad practice that which does not conform to his own opinions, or say that a certain piece of work was done badly, when he knows little or nothing of the conditions under which it was done. By the time a man has seen a set of teeth develop from early childhood to adult life, and has noted all the changes that occur during that time, he may be ready to practice dentistry wisely in its widest sense, though by that time he may be too old to perform the different operations. He must always exercise moderation in practice—not being led away by the vagaries of bridge-work, which is only a modified and greatly improved form of applying an old-fashioned skeleton-plate fastened with clasps. The natural teeth rest in a cushioned socket that allows a little play, and when this immovable bridge is cemented fast, the teeth are held in an immovable manner, and the bridge may not be removed for cleaning. The bridge may eventually come out, but when it does, the teeth may come with it.

The dentist should be pleasant and sympathetic in the operating room, kind to all who need gentle treatment, particularly the little children. In fact, he should be an all-round man. He should have many sides, and *moderation* ought to be stamped on every one of them.

"Cancer of the Tongue," read before the Academy of Stomatology, Philadelphia, by E. W. Stevens, M. D. The structure and surroundings of the tongue render it peculiarly liable to cancer. It is always of the squamious-celled, epithelial type. Sarcoma is exceedingly rare, only six cases being recorded in surgical literature.

Epithelial cancer occurs more frequently in the tongue than in any other organ except the uterus. Lingual cancer rarely ever develops before 30 years of age. One case occurring as early as the twenty-second year was recorded by Dr. Shepard, of Montreal. The oldest case on record was observed by Mr. Jessett in the cancer hospital, the patient being 79 years old. The majority of cases occur between the ages of 45 and 60 years. Epithelial cancer occurs more frequently in men than in women. Heredity seems

to be a very unimportant factor in the development of lingual cancer. Says Mr. Barker, "It would appear as though the occurrence of cancer in the families of those who have the disease in the tongue was little more than a coincidence." Predisposition of smokers seems unimportant. Cancer not occurring in those addicted to the habit more frequently than in those who are not.

Formation of cancer in a large majority of cases is preceded by an abnormal condition of the tongue's surface, designated under various names, chiefest among which is leucoma. Leucoma of the tongue is never seen before the age of twenty years. It appears as the result of syphilis, or an irritant, as rough teeth, smoking or spirit drinking. It is a chronic inflammation of the superficial mucous membrane, and becomes bluish white in color. The tongue's surface becomes smooth and glazed, occasionally marked by shallow furrows. This affection should always be considered a predisposing cause of cancer. Carcinoma may first appear under very wide limits, occurring as a fissure or ulcer, a pimple or tubercle, a warty growth, or more rarely as a lump or nodule in the substance of the tongue. These lesions being constantly subjected to irritation gradually verge into cancerous growths; Butlin and Hutchinson affirm that if there is one means more certain than another to transform a simple into a cancerous growth it is the use of caustics, such as the solid nitrate of silver.

Differential diagnosis between cancer and tuberculous ulcer is frequently very difficult. Tubercular ulcer is always secondary to deposits of tubercle in the lungs, and when a patient presents with ulcer on the tongue and no history of syphilis, but showing unmistakable signs of phthisis such ulcer is almost invariably tubercular.

Secondary syphilitic affections of the tongue would probably never be taken for cancer. But the points of resemblance between cancer and the lesions of tertiary syphilis are so numerous and striking that it is impossible to distinguish between them without resorting to anti-syphilitic treatment, which, in cases of any doubt, should always be employed. An early correct diagnosis of this affection is very important.

According to Butlin the hope of the treatment, which is surgical, in regard to lingual cancer lies in prevention rather than in

cure. As the pre-cancerous conditions become more easily recognized, and the best means of removing them become known, we may expect to see a decrease in the number of cases of lingual cancer.

DISCUSSION.

Dr. H. H. Burchard took exception to the statement of the essayist that heredity has little to do with the development of carcinoma, and stated that there does seem to be a special diathesis connected with carcinoma, for all who are subject to the same sources of local irritation are not victims. In several individuals some local disease process may arise, and show for a time the same conditions, in one, carcinoma results, in the others, it does not. He also stated that clinical diagnosis may be equally as undeterminate as microscopic diagnosis, and cited two cases in support of his statement.

Dr. James Truman considered this matter of considerable importance to the dentist, although confessing at the same time to know but little about it. In tumors of the mouth he considers it very difficult, ordinarily, to distinguish between those that are benign and those that are malignant. He believes that dentists generally are not careful enough to remove all rough places from the mouth, and asserts that he is a strong believer in heredity.

Dr. M. H. Cryer agreed almost entirely in the views of the essayist as expressed, but said if there is anything in the germ theory, and we have an ulcer that forms a ground or nidus for germs to take root and produce a growth, if we should amputate, do we not make more ground or more of a sore in which the germs may proliferate, and would not death ensue much sooner? He asked what mouth-wash Dr. Stevens uses in the treatment of these cases.

Dr. Stevens replied that the wash he generally uses is a solution of ten grains of chromic acid to the ounce of water, which reduces the pain, and acts as a superficial caustic. As all strong caustics, as nitrate of silver, should be avoided, the chromic acid is more beneficial. With regard to the question raised by Dr. Cryer as to furnishing a nidus for new growths of carcinoma by amputating a portion of the tongue, it must be said that the etiology of cancer in the cases reported in the paper has remained to the present day one of the most obscure problems of

medicine. The theory that cancer is of specific microbic origin has long since been defeated, and yet there seems to be strong clinical reasons for believing it to be an infectious disease. It is only very recently that leucoma has been considered a predisposing cause of cancer. Now many surgeons regard it as more significant of cancer than ulcer of the tongue.

Dr. Jameson, after citing a case—a man about fifty years of age, who had an ugly looking sore on the median line of the lip, and who was operated upon three different times, died in two and a half years after his attention had been called to it,—stated that he thinks the province of the dentist is to be on the look out for these conditions and recommend them early to a specialist.

The Pacific Coast Dentist for March, 1895.

"Ether in Dentistry," by F. D. Bullard, M. D., Los Angeles; read before the Odontological Society, of So. California, Feb. 7, 1895. The writer says that chloroform is more dangerous than ether—that fifteen die under chloroform where four die in etherization. The respiratory center is the danger point, the functional paralysis advancing from the cortex down, and from the sensory periphery up, invading this center causes death. Ether usually kills by paralysis of respiration, while chloroform strikes the heart as well; so ether generally gives warning, which chloroform may or may not, and probably one-half of chloroform fatalities take place before complete insensibility is reached. While chloroform is a very convenient anæsthetic, and probably the best for many operations, it is not the best for extraction of teeth. A method of administering ether is given which the writer claims is very easy and makes ether as safe as any anæsthetic. He uses the closed method by means of a slightly modified Parkinson inhaler, which is lighter, simpler and cheaper, and consists of a rubber mouth-piece, a metal mask with wire cage for a sponge, and rubber bag. The metal part is dipped in hot water prior to the application of ether, and the patient inhales *warm ether vapor*, the rubber bag excluding to a great extent, at least at first, the atmospheric air. The following claims are advanced in its favor: 1st, ease and rapidity of anæsthesia; 2nd, small discomfort to patient; 3rd, ability to push ether rapidly; 4th, little ether used—one-half to one ounce in induction of anæthesia, and about as much every

half hour thereafter; 5th, non-saturation of patient with ether, quick recovery, little or no vomiting; 6th, ether confined to inhaler, no vapor in room; 7th, increased safety, because vapor is warmed the following dangers are dispensed with: spasm of glottis, ethereal pneumonia and bronchitis; nephritis, because but little is taken; explosions from lamp or cautery, because ether is confined to inhaler; 8th, no assistance needed by the dentist. The writer does not think that the quickness of anæsthesia by this method denotes asphyxia, but he believes that ether produces a molecular paralysis of the nerve center, and by this method a large amount is quickly inhaled and carried to the blood by these centers, as the warm, highly charged vapor is taken deep into the lungs almost at the outset of the inhalations.

"A New Method of Attaching Artificial Crowns to Badly Decayed Roots," by G. H. Chance, D. D. S., Portland, Ore.; read before the Stomatological Club, Feb. 26, 1895. The writer believes that almost any badly decayed root can be saved and crowned, if there remains enough sound dentine to hold securely one end of a small screw-post in place, and if the peridental surroundings are or can be made healthy. He gives a typical case to illustrate his method: A gentleman of middle age had a right upper anterior bicuspid which presented the following conditions: crown entirely gone, decay extending above and beyond the ordinary normal gingival margin, gum badly inflamed and entirely covering up the root. At the first sitting the excess of gum tissue was removed, and after ascertaining that the root was strong enough to support a crown, the decay was removed, the concave depression in the end of root made smooth with round burs, the pulp canals opened and treated, the space between the entrance to canals and gum margin closed with cotton and sandarac varnish, then the patient was dismissed for the time being. At the next sitting the pulp canals were filled and an impression of the parts taken in modeling compound, from which a plaster cast was made, and from it dies of 'Melotte's metal' so as to strike up a thin gold cup to fit the concavity in end of root, using enough gold to allow edges of cap to extend to gum margin. The cup, when ready, was adjusted to root, and a second impression with 'the bite' was obtained, cup coming away with

impression, which was transferred to plaster cast. A Bonwill crown of proper form and shade was selected, ground, and the upper margins beveled so they would just enter and be enclosed by the edges of the gold cup, giving it somewhat the appearance of a banded Richmond crown. Then a small screw-post was inserted in each canal, and a slot was cut in the top of the cup large enough for the ends of posts to pass through. The parts were then dried, the convex surface of the cup painted with a little thick chloro-percha and slipped over the posts to its position on the root, the excess of chloro-percha being gently pressed out, and warm air used to evaporate the chloroform. Finally the crown was cemented on with oxyphospate, and the occluding end in the cavity of the crown capped with gold, the whole forming a firm and satisfactory piece of work, which after several months use is still doing good service.

The writer believes that much better results can be obtained by the use of a Bonwill crown, or one constructed on the Bonwill principle, in connection with a screw-post and swaged cup to cover the end of the root, than with any other crown in which the pin is directly attached to the porcelain; and, in case the porcelain be broken, the Bonwill crown can be easily replaced without disturbance to the root.

"Dental Jurisprudence," by H. R. Wiley, A. B., San Francisco. The writer says that the young dentist should begin the practice of his profession with at least some slight knowledge of the legal responsibilities attending it, so that he may not become involved in any litigation, and may be able to defend himself from blackmailing schemes, etc. The significance of this branch of knowledge to the dentist, as a factor in a successful professional career, entitles it to recognition as a necessary part of the curriculum of all dental colleges. They will undoubtedly give to this subject due consideration in the near future. A half-dozen or more lectures presenting the subject, relieved in a measure from the burden of technical terms and prepared with due regard to simplicity and the easy application of the principles enunciated, would prove of incalculable value to at least some of the students.

The Dental Register for March, 1895.

"Odontalgia," by N. S. Hoff, D. D. S., Ann Arbor, Mich.; read before the Ohio State Dental Society, December, 1894. The

writer defines odontalgia as functional disturbances of the dental organs and tissues, and classifies it under the following five heads: (a) exposure of the dentine by accident or caries; (b) exposure and disease of the pulp; (c) disease of the peridental tissues; (d) new growths in the pulp tissue or upon the roots; (e) reflex irritation.

It is not clearly understood why exposed dentine causes toothache, as there is a great difference in the susceptibility of dentine in different patients, a slight exposure will cause pain to some persons, while an extensive exposure in others will cause little or no pain; at different periods exposed dentine will be painful in the same persons; and different teeth in the same mouth will vary in sensibility. Formerly pain in dentine was accounted for on the theory that it was subject to inflammatory processes; but the absence of the essential elements of inflammation disproves this theory. Some think the dentine has sensory nerve fibers, but are unable to demonstrate their existence, or to trace any connection between the nerves of the pulp and the organic tissue of the dentine. Bodecker, in his 'Anatomy and Pathology of the Teeth,' says: "It is impossible to admit of the existence of a connective tissue holding nerves alone in its constituent soft parts. Neither have we, nor has Retzius in his recent investigations, been able to trace a direct inosculation of the dentinal fibrillae with the axis fibrillae of the nerves so abundantly distributed throughout the pulp tissue. As soon, however, as we admit that the dentinal fibrillae are formations of living matter, the same as are the nerves, all difficulties vanish in explaining transmission of sensation from the periphery of the dentine to the nerves of the pulp tissue. Living matter is contractile. Nerves are made up of living matter, and owing to their reticulated or beaded structure are fittest for that transmission of contractions from the periphery to the nervous centers which we call sensation. Contraction of the dentinal fibers transmitted into the reticulum of protoplasm at the periphery of the pulp, and thence in the ultimate nerve fibrillae—all of which formations are proved to be continuous—is sufficient to explain the transmission of sensation, or speaking bluntly, of pain." This theory has much to commend it, and can be accepted until we are given one more plausible; for cold, heat, escharotics,

etc., which produce contraction in protoplasm and organized tissue elsewhere, also produce pain when applied to exposed dentine.

The conditions surrounding exposure and diseases of the pulp are different and more complicated, requiring prompt treatment; the symptoms are frequently manifested with great energy, because of the peculiar environment of the pulp and its sensitive nature. The pulp is richly endowed with blood vessels and nerves, and especially toward the periphery with blood capillaries. The odontoblast layer on the periphery of the pulp is not highly sensitive, but the granular layer beneath contains the endings of the nerves and is very sensitive. Irritation of the exposed pulp is followed by pain, its severity depending on the character of the irritant, and is accompanied by a disturbance of circulation. The first effect is contraction of the tissues and anemia, quickly followed by relaxation and a determination of blood, congestion and incipient inflammation. This condition requires nice manipulation to prevent inflammation; a removal of all irritants, the application of sedatives, disinfection with a non-cauterant germicide, the application of an antiseptic, and a careful adaptation of a protecting filling. Inflammation of the pulp comes from inoculation under conditions of general systemic infirmity, or because of excessive exposure, and irritation from various excitants. Besides the usual symptoms of irritation, the entire pulp is persistently congested, which partially suspends its function. There is not only acute pain, but the tissues become hypersensitive, and this condition cannot be treated with the ordinary local remedies. In most instances the pulp cannot be saved, but in some it can be, even after extensive inflammation. So great care should be used in determining whether or not a pulp can be saved. A temporary relief from pain can be obtained by the removal of all local irritants; the application of an astringent, non-irritating sedative; an antiseptic dressing covered with a suitable material; counter stimulation of the systemic eliminating organs to withdraw the excess of fluid from the pulp, or a heart sedative to enable the pulp tissues to recuperate. When the inflammation has subsided, the pulp may be covered with a non-irritant filling material, and the carious cavity filled with some more resistant material. Judgment must be used for individual cases, but where much service will be required of a tooth, it is better to destroy the pulp. Gangrene of the pulp may involve

the whole pulp or only the exposed surface. Where the latter is the case it takes the form of a slough, with little pain except when irritated, but sufficiently troublesome to require attention. While some practitioners advocate excising the diseased portion and saving the remainder, it is not generally successful. Pulp gangrene is very painful when the pulp is inclosed by fillings or debris of caries, as the generation of gas creates pressure and irritation, and as the pulp is congested, unless the irritation be removed, dissolution will follow. The excessive pain can be reduced by opening directly into the pulp chamber to allow the gas to escape; after which the pulp can be anæsthetized and removed, and the canal sterilized and filled. It is often difficult to locate the affected tooth, as there may be no complication with the peridental membrane, and through reflex irritation the pain will be felt in another tooth, or in the eye, ear and face. Extreme heat or cold is a good test, as heat expands the gas and so causes more pain; and cold, while it pains at first through shock, condenses the gas and contracts the tissues, which restores the tone to the blood vessels, thus giving relief. Percussion will not aid much unless there is peridental inflammation. Putrefactive changes may be determined by difference in resonance. Reflected light will help in noting the difference in opacity. When a pulp is in this condition, it is beyond treatment, and the saving of the tooth must be looked to. When a patient cannot endure the drilling necessary to remove the pulp, the heart's action may be depressed with drugs, and a warm poultice applied over the region of the affected tooth to relieve congestion and prevent pericemental irritation. When the pulp can be reached at once, the disorganized tissue should be cleared away, the dam put on, and the pulp injected with cocaine and removed. If there has been no suppuration, the tooth may be sterilized and filled at once, but if gangrene has taken place it is better to disinfect and defer filling canal until subsequently. Tumefaction is rare, and usually is simply hyperplesia, an excessive growth of the basis substance, which is not very painful. The nerve supply is scant, but the blood supply is abundant. It is simply a pathological tissue and cannot be restored to its normal condition. It should always be destroyed, which can be done by anæsthetizing and removing by an operation, as cauterizing chemicals produce much pain and are difficult to manipulate.

Toothache from disease of the peridental membrane is not uncommon, and as the membrane is easily inoculated from a diseased pulp, most cases come from a destructive inflammation of the pulp. The environment of this membrane is similar to that of the pulp, its nerve supply is not so rich, but it has a liberal blood supply. When congested by inflammation it thickens and lifts the tooth, so that percussion from mastication is very painful. When the disease is produced by external irritation, such as wedging, clamps, etc., it will soon recover; but when brought on by infection from the pulp, or by irritant chemicals, it may be serious and very painful. When pericementitis is due simply to an inflamed pulp, the treatment depends upon that given the pulp, and the removal of the irritated pulp usually causes the inflammation to subside. But when the membrane has itself become inoculated, the treatment is more complicated. Sometimes it can be aborted, but usually the disease must run its course to suppuration, and if so the process should be hastened by poultices, etc. When the pus comes through to the surface, it can be drawn off by the lance and with it much of the inflammation, and this usually gives relief. The further treatment is to keep the sinus made by the pus open and clean until resolution takes place.

Calcific growths in the pulp chamber and on the roots of the teeth are often painful. When they form in the connective tissue of the pulp or on the walls of the dentine, no excessive pain is felt; but when the formations take place in the capillaries or in the nerve tissues, they cause much pain, which may be manifested in other teeth, in the eye, ear, etc., or in facial neuralgia. The diagnosis is difficult, but all teeth with large fillings should be examined, as well as those denuded of enamel or dentine. The pulp should be removed, or the tooth extracted.

Reflex irritations should be carefully studied, as an irritation in any part of the body may manifest itself in the teeth, sometimes in sound ones, but generally in one weak from some cause. Treatment may give relief, but sometimes the tooth must be extracted. The dentist and physician should consult in such cases.

One kind of toothache can be put under the head of acute irritation, with destructive inflammation of the peridental membrane. It generally follows the removal of the pulp by various methods, and is often present when irritating germicides or anti-

septics have been used for sterilization. It sometimes follows the capping of exposed pulps and insertion of fillings. There is generally varying pain without soreness, and if from a capped pulp it is sometimes neuralgic. It is probably irritation of the nerves of the dental tissue around the tooth, and I think it is a secondary effect of the use of irritant anæsthetics.

The Ohio Dental Journal for March, 1895.

"Simple and Complicated Regulating Mechanisms; Esthetic Mechanisms; Proper and Improper Anchorage," by J. N. Farrar, M. D., D. D. S., New York City. The writer says that in mechanics simplicity is greatly to be desired, and that all first-class machines have no useless features. Every one does not sufficiently understand mechanics to realize that there can be simplicity in complicated machinery, and that is why some dentists argue against improvements in regulating appliances. These were formerly cumbersome, but have been so improved that now they constitute one of the most important features of dentistry, and are ridiculed only by those who have not sufficient skill to copy them. Any mechanism that can be easily operated and will accomplish the desired result is simple, while one which requires much care and time to manage is imperfect. If a regulating appliance is difficult to manage and painful to wear, it is more complicated than one which requires mechanical genius to fashion, but which can be managed easily and quickly, without causing pain.

Esthetic mechanisms are another phase of improved mechanics. Failures may come from the operator's lack of skill or the patient's perversity, but many failures arise from the disgust of the patient at the conspicuously black and filthy appliances. Many failures could have been avoided by the use of delicate and beautiful gold mechanisms.

In treating of anchorage the writer says that the anchor teeth should be used for moving only one tooth at a time, and that they should be examined frequently to prevent too great inclination. If they have moved too far, they should not be used again until they have regained their normal positions, but a little tilting is not dangerous, as they will all incline a little to the strain. Anchor teeth will usually settle back to their normal places, even if elevated slightly, but if elevated it may require months, so there

should be no haste about grinding them down. The more teeth that can be used for anchorage, the less danger there is of moving them, and of soreness of the sockets.

The Dental Cosmos for March, 1895.

"Coagulants and Non-Coagulants," by A. W. Harlan, M. D., D. D. S., Chicago; read before a union meeting of the First and Second District Dental Societies of New York State, Jan. 8, 1895. In ending his paper the writer says, "To recapitulate the essence of this paper, I have prepared the following conclusions:

First. True coagulators of serum-albumin are not diffusible when brought in contact with it in a tooth-root.

Second. Coagulators of the organic matrix of a tooth-root, tube contents (dentine), by the concretions of such albuminous matter prevent the further entrance of such coagulators as soon as their affinity for water is satisfied.

Third. The destruction of coagulum in such situations being a foregone conclusion through the agency of anaerobic microbes, brings about a chemical change in coagulant antiseptic which deprives it of the coagulant property, hence it passes into the circulation, and is excreted as other foreign inert bodies are discharged from different channels.

Fourth. The addition of boroglycerid to a coagulant in definite proportions so alters it that it no longer acts as a coagulant; hence it is possible for it to pass through tooth-structure and be recovered from the liquid media surrounding a tooth, when its coagulating property will be restored.

Fifth. Non-coagulants soluble in water diffuse readily through tooth-structure, as has been shown repeatedly in experiments out of the mouth, not only in egg-albumen, but likewise in serum-albumin.

Sixth. Oleaginous non-coagulants pass through the structure of a tooth quite slowly in the presence of water in serum-albumin, and oils pass through filtering solutions, showing that they displace water. The vaporizable portion of an essential oil will give to a substance which it permeates the characteristic odor in from three to six hours (Watts).

Seventh. A non-coagulant disinfectant destroys developed, and deprives the spores of anaerobic pathogenic microbes of the

power to be developed; and, as it does not coagulate albumin, it does not prepare a food for the sustenance of any accidental ingress of such developed organisms; hence the future of such teeth treated by non-coagulants is infinitely preferable to the conditions surrounding those treated by coagulants.

Eighth. A non-coagulant disinfectant completely sterilizes infected dentine by virtue of its diffiusibility through it, while a coagulant either precipitates an insoluble barrier or so concretes the albuminous matter with which it comes in contact that it cannot act as a perfect sterilizer, but effectually seals infectious and poisonous matters in the dentine, which ultimately have their exit through the cementum and pericementum, depriving both structures of needed vitality."

International Dental Journal for January, 1895.

"The Relative Penetrating Power of Coagulants," by James Truman, Philadelphia; read before the Academy of Stomatology, Phila., Dec. 10, 1894. In beginning his paper the writer says, "The question of the proper material for filling root-canals has been a subject of discussion and experiment for the past half-century, or since Maynard introduced the method of filling these canals with gold. In connection with this the consideration of certain agents has led to a decided antagonism in regard to the diffusibility, coagulation, and antiseptic properties and values to be placed upon these in the general treatment of the central pulp-canal and the tubuli branching from this throughout the dentine. It has been clearly evident that the inner tubular portion, fibres of Tomes and Neumann sheaths, form no insignificant part of the organic matter of the tooth substance, and that death of the central organ means necessarily the death of the whole and subsequent decomposition of this tissue, or at least the central protoplasmic portion, the sheaths being almost indestructible. Hence the treatment of the pulp-canal, however perfectly accomplished, must fail to meet the microscopic elements in the tubes, and the decomposition taking place therein results in the discoloration of the entire tooth, and may act disastrously by septic emanations upon the vitality of the entire structure. The importance of this has not been lost sight of by intelligent operators, but the difficulties of manipulation have been serious. It has been plain that but

two methods could be relied upon to overcome the difficulty, the property of coagulation and the diffusibility of various essential oils, aided by osmotic action. Both methods have had decided advocacy and it is very probable that both have a positive value, the extent of which has as yet to be determined, for, as far as I am aware, the relative values of the systems of treatment have not been settled with satisfactory experimentation, or, if so, have not been divulged in the papers upon this subject; all the points defended by the writers seem almost entirely to be based on assumptions, imperfect experiments, or upon clinical observations."

After quoting from several writers on coagulants the writer gives the following remarks which he had made before the A. D. A. in 1889, in a discussion on root-filling: "The question that has given me much thought for the past two or three years is that no filling of canals can be perfect. Why? Because a large part of the tooth is made up of tubulated structure, the tubuli holding organic matter, and when the pulp dies the organic substance dies and decomposition begins immediately, and the sulphuretted hydrogen occasioned by that decomposition is the principal source of trouble. What should be done? My study of the subject and the results of many experiments led me to the conclusion that it was essential to prevent this decomposition, and that this could be best accomplished by coagulating the organic tissue. The coagulant best adapted for this purpose is chloride of zinc, because of its great affinity for water. It will follow moisture to the very extremities of the tubulated structure, and consequently change the character of the contents so that decomposition will not take place. I have kept coagulated albumen for months without change."

"The position taken by myself in 1889, that coagulants placed in the central canal would permeate the tubuli and coagulate the contents, remain true to-day, as the experiments in capillary tubes will demonstrate, and as was previously also demonstrated by Dr. Kirk. Some of these points were taken up seven years ago by myself, but dropped for a more favorable opportunity to continue them. My intention was to endeavor to show that coagulants would penetrate tubes of minutest character possible to be handled satisfactorily, and that this penetration was indepen-

dent of circulation. My earlier investigations seemed to warrant this belief. Diffusion is recognized in the living tooth as performing an important and continuous part in its nutrition. It seemed certain, as the tubulated portion of the dentine invariably imbibed finely-divided colored matter in solution, that therefore it must take up any other fluid, if of equal solubility, with facility. This beyond question is true. The main difficulty here being to demonstrate that the coagulation was continuous without the aid of circulation."

"The effort was, as before stated, to find results in tubes not exceeding a millimetre in diameter, and if coagulation occurred it must be through absolute contact of the agent with the albumen or gelatin used in the experiment. It was necessary to fill the minute tubes with the albumen and then seal the ends. Both processes were accomplished readily by nearly filling the tubes and then quickly melting the ends in a Bunsen burner. This proved entirely satisfactory. It was found, however, that the albumen in the tubes dried and contracted upon itself, leaving spaces. To meet this difficulty the albumen was combined with twenty per cent. of glycerin. This served an excellent purpose, and proved no interference with coagulation either in large or small tubes, with all the agents known to be positive coagulants, with one exception. It was found that mercuric chloride had little or no effect apparently on albumen and glycerin. This was repeated a number of times. It was then applied to albumen without glycerin, and coagulation was immediate. It was found, however, that glycerin simply delayed coagulation, for in the course of a few days the effect of the mercuric chloride was plainly visible in flocculent masses. This fact necessitated a repetition of all the experiments to determine their correctness. It was found that mercuric chloride was the principal one of the series seriously antagonized by the glycerin. The tubes were drawn to varying lengths not exceeding, as a rule, over 0.5 millimetre in diameter. The unit of time was fixed at ten days. The experiments were also made to include the essential oils and many agents known to be non-coagulants, for the reason that some writers have asserted that several of these produced coagulum. Further, the action on gelatin was examined into, but this was confined to but few tubes and without marked result."

"Whenever possible the effort was made to have coagulation proceed in opposition to gravity. This is beautifully shown in the test-tube. What does the work as a whole teach? 1. That coagulants do not prevent by their own action the diffusion throughout the entire tube. 2. That the penetrating power of such agents as creosote, carbolic acid, and zinc chloride, those most frequently used, varies materially. That creosote is a very poor coagulant when compared with carbolic acid, and the latter, for this purpose, is not to be compared with zinc chloride or silver nitrate. 3. That in proportion to the coagulating power of the agent will be its penetrating force independent of gravitation. No attempt was made to determine with exactness the penetrating property of essential oils, but if coloration is any indication, the tubes presented did not indicate that this is of much value in closed tubes, but this, it is acknowledged, may not apply in tubes where circulation is an adjunct to aid penetration. In order to test various agents, such as the essential oils, and also to repeat the tests with agents already used, as carbolic acid, chloride of zinc, creosote, etc., with albumen and glycerin, and without glycerin, and also the effect on gelatin, a series of tubes was prepared. It was observed that creolin gives but slight coagulating effect, oil of cloves about the same, carvacrol shows slight cloudiness, sanitas oil slight coagulation, mercuric chloride no coagulation in tube (glycerin and albumen). Tannic acid shows extended coagulation; oil of cinnamon, action marked but limited; oil of cajaput, no result; caustic potash, no result; zinc chloride in gelatin, no result; phenol sodique, partial coagulation. An attempt was made to carry staining with the coagulation. Zinc chloride was colored with carmine, with the result that the coagulation left the stain and proceeded down the tube. Eugenol is but a poor coagulator, On thymol, the effect is but slight and not continuous. A test was made to show the possible action of oxy-chloride of zinc on the contents of the tubuli in the dentine. The oxychloride, of the same consistency used in filling pulp-canals, was placed in the funnel portion of a small tube. It soon hardened, but the coagulating process was marked upon the albumen. It began immediately and has continued without interruption to the present time. The line of demarcation between the oxychloride and the coagulation is distinctly shown. This, probably, is one of the

most satisfactory of the tests, as it abundantly proves that contact with albumen is all that is necessary to produce coagulation with zinc chloride, and if this be possible out of the mouth, how much greater must it be under more favorable conditions in the tooth. Caustic potash was experimented upon not as a coagulant, but to observe the effect on albumen and gelatin. Though several tests were made, no visible results were produced, though this does not antagonize the recognized quality of this agent as one of the most deeply penetrating and uncontrollable caustics used on the tissues. The action of nitrate of silver in repeated tests was rather a surprise. It has generally been regarded as a superficial coagulant, but in every instance it has proved deeply penetrating, and coagulating with rapidity and certainty, very nearly equal to zinc chloride. This fact assumes some importance in connection with the use of this agent in teeth. Its rapid penetration raises the question, Can we use it without danger to the pulp in posterior teeth as has been recommended? At present I am not prepared to answer this question, but it seems as though a risk equal to that assumed in the use of zinc chloride is taken when placed in children's teeth for the prevention of caries."

"The experiments were extended to the penetration of the tooth structure by a number of coagulating agents. A large number of teeth were kept under the action of these, the pulp-canals being first slightly enlarged and filled with the agent daily. The result has not been entirely satisfactory, microscopic examination shows decided action throughout the dentine, the tubes in several sections being nearly obliterated and indicated only by fine lines; but while this demonstrates a positive change in the organic contents of the tubes, it does not absolutely show that this has been caused by the coagulant. Thus far I have been unable to carry the stain given the agent along with the coagulation. Silver nitrate in several sections penetrated in seven days two-thirds the length of the tubes, but the extreme discoloration made it impossible to follow the individual tubes except at the extreme limit of coloration. Tests were made with a variety of stains, but with no result, the coagulation invariably separating from the stain. When the color can be carried along with the coagulation, it will visually show what may be regarded as absolutely true, that the coagulant is carried in the dentinal tubes as effectually as in those exhibited."

"In the specimens prepared for the microscope, the evidence is positive to the trained eye that every tube is filled with coagulated organic matter, and this has been so frequently repeated, and with precisely the same results, that I have no hesitation in accepting it as a fact. I failed, however, to observe any change in the cementum, and I am, therefore, led to doubt the possibility of any coagulating effect in that tissue by any of the agents used."

"An attempt was made to verify Dr. Kirk's experiment of cementing a tube in a tooth, sealing the foramen, and then filling the tube with an active coagulant, as zinc chloride. Six perfectly fresh teeth were taken, tubes cemented, and foramen closed. The tubes were of varying length, the fluid in them ranging from a column of 7 to 18 centimetres. These were placed in a second tube filled with egg albumen. The result in four was that coagulation began after several hours at points indicating leakage. One of these was removed, the leak covered with paraffin, and reinserted. This has remained embedded in the albumen for over a month without any result. In two cases the leak evidently was not through defective manipulation, but appeared to be from an invisible crack in the enamel and at the bifurcation of molar roots. This demonstrates the conclusions arrived at by microscopic tests, that zinc chloride, the agent used, cannot penetrate through the cemental tissue. If this cannot be done by the force of the column of fluid, it certainly cannot by diffusion."

"In the paragraph quoted from a portion of my remarks in 1889, I stated my faith in coagulation as a remedy for discoloration and an effectual barrier to the ingress of micro-organisms into the dentinal tubes. I am still of the same opinion, the only modification I would make of these views then expressed would be that I fear the possibility of the action of the zinc chloride upon the pericementum through its penetrating power, passing out through the foraminæ, if more than one exists. My observations, as heretofore stated, do not show that the use is at all dangerous if care be taken to close the upper third of the canals thoroughly before placing the coagulant in the tooth. Clinically, I have observed in one case only an action upon the pericementum, which I have been led to attribute to the zinc chloride passing through the foramen. The large clinical experience in

filling root-canals with oxychloride of zinc, now covering many years and a large number of practitioners, seems to show that it can be used without risk, provided proper precautions be taken. In the use of zinc chloride as an obtundent of sensitive dentine there cannot be two opinions. The experiments demonstrate, beyond cavil, that this agent is exceedingly dangerous to the life of the pulp, and should be abandoned for that purpose."

Letters.

A REPLY FROM OHIO.

SANDUSKY, O., March, 1895.

To the editor of the Dental Digest:

DEAR SIR:—I notice in the last number of your journal what the writer terms "a report on the result of immediate canal filling." The "report," if a description of the suffering of the patient after the operation, but with no account of the operation itself may be so considered, would indicate a failure on the part of the operator to correctly diagnose the conditions, and not a failure in the method.

Immediate canal filling cannot be successfully performed so long as there is a discharge of pus through the root, from a sac at the end of the root. Where this is the case the disease must be cured before attempting to fill. Otherwise the suffering so graphically described by the writer will certainly ensue.

The method in itself is all right, *provided*, the diagnosis, and the operative proceeding is so also. In this instance, the sufferer being a dentist, it would seem that he should have at once understood the cause and had the root filling removed promptly.

Yours truly, E. J. WAYE.

A LETTER FROM FLORIDA.

MANATEE, FLA., April 5, 1895.

To the editor of the Dental Digest:

DEAR SIR:—On page 148 of the DENTAL DIGEST for March, Dr. C. N. Peirce speaks of a tendency shown in ancient skulls and

jaws to redevelopment of the alveolar process to take the place of the lost teeth for masticating, and says this is prevented in modern jaws by the insertion of plates. Judging from my own observation this is a rather astonishing assertion. I am aware of Prof. Peirce's high standing as a teacher. Were such a claim made by some unknown person, I would consider I was laying myself open to just criticism for occupying valuable time of your readers in its consideration. Now in a very active practice of dentistry for twenty-eight years I have never seen a case where there was the remotest tendency as he describes, while I have seen so many hundreds of cases that prove the reverse, and which I doubt not every other dentist in practice a few months has also noticed, that I wonder if Dr. Peirce was correctly reported. If any dentist has seen any tendency toward a reproduction of the alveolar process in a jaw at a point immediately antagonistic to teeth in the opposite jaw I hope he will describe it for the DIGEST. I have seen depressions in jaws opposite such teeth extending to the depth of near half an inch below the parts which were not so driven down by antagonizing teeth. My opportunity to see a great many elderly people who have not had this tendency to reproduce the alveolar process prevented by the insertion of plates, has been extensive. Hence, I have no doubt that the dental profession to a man will say that instead of Dr. Peirce's supposition being true the very opposite is universally observed.

Respectfully yours,

W. E. DRISCOLL.

A CRITICISM FROM SPRINGFIELD.

SPRINGFIELD, Mass., March 28, 1895.

Dr. J. N. Crouse,

MY DEAR SIR:—Your *printed* card requests a reply, at least, so as to save you the *labor of writing* again, etc.

I shall not subscribe for the DIGEST until it proves itself a necessity to me, you may argue that the only way to make it invaluable is to support it at once, and to a certain extent that is true, but the circumstances of this case are such that I think differently about it. I now kindly ask you to take no offense at

what I believe it to be a duty to say, believing that as a member of the D. P. A. it is perfectly proper. We are ridden pretty hard in this city by a licensee of the "Hale Method," and as a matter of course the daily questioning regarding it is considerable, but we can only say that we know nothing about it. We did think that part of the mission of the D. P. A. was to protect us from such things, but find that despite "confidential circulars," etc., we have no *real* information. We don't cry for jealousy. We are securing three square meals a day and a few other life comforts; but we *did* think the *mission* of the D. P. A. was more in the line of protection from fraud than from so-called extortionate rates from Combine Supply Houses, or, in fact, anything to do with the *trade*.

If we have put our money in for one thing and don't get it, what must we think when asked to give more to the same institution for something entirely different? So far as the labors of the D. P. A. are concerned against the I. T. C. Co., they have begun grandly and prosecuted well to the present time—though I believe the main patent (Low) has not yet been decided upon, and I am very glad to have invested in it.

If it is the object of the DIGEST "*to distribute; to arrange and reduce to a plan*" the current dental literature, it will do a great work for the busy man. I have not seen *much* of it yet.

Respectfully, A. M. Ross.

A REPLY TO THE CRITICISM.

CHICAGO, April 24, 1895.

Dr. A. M. Ross, Springfield, Mass.

DEAR DOCTOR:—Your communication of March 28th, in which you criticise the Dental Protective Association and the DIGEST was duly received. To-day is the first chance I have had to look over its contents carefully since receiving it.

I will first reply to your criticism of the DIGEST. You must perceive, or you may not be aware, perhaps, that making digests of other men's articles requires a scholarly, unprejudiced writer, and an immense amount of time. I could fill the journal with original and copied articles, and society proceedings, without cull-

ing them out or cutting them down, for a fraction of the time, labor, and expense that it takes to digest the current literature. To read all the journals, select from them the articles that have merit, reduce them to the limited space, and yet not lose the valuable portions of the papers or discussions, is no small task. If you have doubt of this, take one journal next month, make digests of the important articles, and send them to us. You will then realize something of the task, when you remember that there are about 20 journals to be read and condensed, and will hardly expect us to attain perfection in the first two numbers.

Of course, you will do as you think best about subscribing for the DIGEST, but the members of the Protective Association will certainly show themselves as very ungrateful, and as having no conception, whatever, of what has been accomplished by the Association, if they do not aid in this part of the movement. When we tell you that last year we were out of our office over two months hunting up testimony and helping get it in shape to present to the court, which does not include the time spent in the correspondence necessary to find this testimony, you can get a little idea, if you will take the trouble to think of it, of something of the work that has been necessary, and the sacrifice that has been made in behalf of the Association. You may say, what have we accomplished;—we have relieved every practitioner from any annoyance whatever from patent claimants for the last eight years, barring perhaps a half dozen who had signed licenses and by so doing deprived the Association of the power of protecting them in just one federal circuit where we did not wish to test the validity of the license contract. Only for this Association, every practitioner who crowns a root, takes articulating bites for artificial teeth, makes a bridge of any description, attaches clasps to a rubber plate, inserts an inlay—in fact any practitioner with a first class practice—would be obliged to pay at this time a royalty of from $100 to $500 per year, and in some instances more; we know of one firm in New York who have paid the Crown Co. $6,000 during the last seven years as per their sworn statement; so the figures which we claim ($3,000,000) as having been saved to the dental profession are under, rather than over, the amount. But all this saving of money and trouble to the dental profession has been done so thoroughly, and with so little trouble to anyone ex-

cept those managing the Association, that those who take but little interest in anything but themselves may not know, or have forgotten, that much which has been accomplished, has been by thorough management of the business and careful handling of the money entrusted to our care.

This work of the Association has been carried on for eight years, and during this time there have been no annual dues and no assessments, although each member in signing the by-laws empowers us with the authority "to collect assessments, in all not to exceed $10.00," which in substance is a note for $10.00, payable on demand. But we have never asked for an assessment. Will you be kind enough now to tell us of any other association that has accomplished as much and has not made any assessments or demands upon its members for the same length of time?

Have you any idea what would soon again be the condition of the dental profession should the Protective Association disband? Within a few weeks we have been consulted by certain ones interested in a new patent corporation, whose object is to get royalty out of the profession, to know what our position would be if they issued a circular and attempted to sell licenses for certain things on which they have patents, and which would very materially interfere with the profession if they could be enforced; but why should we protect the entire profession? Large inducements were offered us to disband the Association and let them have full sweep. We only throw this out as a suggestion, with a view of emphasizing the importance of the profession being banded together.

You are mistaken about the mission of the Protective Association. Its mission was: first, to defend the profession against demands of patentees whose claims are worthless; second, to bind the dental profession together for mutual protection, strength and helpfulness. The "Hale Method" was voluntarily taken up by the Association, investigated carefully, and all that was in it discovered; a letter was prepared and sent to all members of the Association who desired it, explaining all the formulæ and methods adopted at that time, and this without any uncertainty; and we did this at the expense of much time and considerable money. We did it because the method was a disgraceful fraud on the profession, and so thorough was the exposure that the originator left

the part of the country in which he was living and took up his abode elsewhere, as a number of the people that have been duped by him would have him arrested if he should return. With this circular letter you say you have no information. What would you like the Association to do? Come to your city and throw the man of whom you complain out of his office, or explain to the people of your city that the "Hale Method" is only a method of humbugging the community, and a very questionable method indeed.

As we are not receiving any salary, but are practicing dentistry for a living, we could hardly spare the time, otherwise we would gladly do this for you. In the meantime, Doctor, what are you doing to help your profession or to aid the reform movement? You have, we believe, paid just $10 to help in this movement and to be benefitted thereby; nevertheless, you are a long way in advance of a great many men in the dental profession who have received all the benefits and have never contributed a dollar, not even joining the Association.

In answer to that part of your letter in which you say "If we have put our money in for one thing and don't get it, what must we think when asked to give more to the same institution for something entirely different?" We wish you to distinctly understand that the "something entirely different" to which you allude, the Dental Protective Supply Company, to the stock of which you may have been asked to subscribe, *has nothing whatever to do with the funds of the Protective Association.* This company, on the other hand, however, is offering benefits to the members of the Protective Association in the way of a reduction on goods which they can buy from it, not because it was considered that the members had not received a full benefit for their investment, but more with a hope that those who had not already joined would unite with us, so that by and by when we are worn out, the new officers of the Association can receive a reasonable compensation out of the income of a fund, properly invested, which would be thus created; and that the profession should never again be in the deplorable condition as regards defense that they were in before the Association was organized. We are glad to be able to give the members of the Association some benefit, and there are many members who have availed themselves of our supplies, and have thus saved two or three times their membership fees within the last six months.

In regard to subscribing to the stock of the Supply Company—there is no compulsion whatever about this, as it is the kind of investment that business men will take to very readily if the dental profession do not wish to avail themselves of it. It is organized on an honest basis, and we do not design watering the stock and making fortunes out of those who go in on the first investment. Within two months we have had business men offer to take all of the stock, and pay us well for our time in addition, if we would leave out our co-operation with the profession. If the dental profession do not enter into this enterprise they will have no one to blame but themselves. It is a reform movement and not a swindle, and is designed as another means of banding the dental profession together.

I remain, yours truly, J. N. CROUSE.

ARGON.—At a meeting of the Royal Society in January last, Lord Rayleigh and Professor William Ramsay presented a paper announcing the demonstration of a new substance in the atmosphere, which they term Argon.

It had previously been shown by the former gentleman that nitrogen extracted from chemical compounds was about one-half of one per cent. lighter than that obtained from the atmosphere; hence he was led to study atmospheric gases under a number of different conditions, and the above-mentioned discovery was the result.

Argon is prepared by freeing air from oxygen through the medium of red-hot copper, residue being passed from a gas-holder to a combustion tube heated in a furnace (also containing copper) in order to remove all traces of oxygen; the issuing gas is now dried by passage over soda-lime and phosphorous pentoxide, then made to enter a combustion tube packed tightly with magnesium turnings, and heated to redness in a second furnace. Ultimately the Argon is transferred to a small gas-holder and caused to circulate through a series of tubes of copper, copper oxide, soda-lime, phosphorus pentoxide, and red-hot magnesium turnings, until freed from any possible contamination with oxygen, hydrogen, hydrocarbons, or nitrogen. It is preserved over mercury or over water saturated with itself.

Notably all attempts to combine Argon with other elements have so far failed. It is suspected, however, that it is not an element, but a compound, as it partakes of the nature of a monatic gas.—*Medical Age.*

To remove the black deposit from rubber plates that have been in long use, I take of alcohol, ammonia, and chloroform equal parts. Pour a little of the liquid onto the plate, add pumice stone, and quickly scour; then polish with oil and plaster, in the usual way.—*Dr. W. D. Tickner.*

The Dental Digest.

PUBLISHED THE

TWENTIETH DAY OF EVERY MONTH.

Editorial.

CRITICISM VERSUS DEEDS.

The management of the Protective Association, as well as those engaged in other reform movements, can well appreciate the feelings of a distinguished divine who said that he wished his friends would send him their flowers while he lived instead of heaping them upon his coffin when he was dead. We have wondered what it is in human nature which makes men so afraid to express any commendation or appreciation when they are pleased, but so ready with the sharp, quick word of criticism when they think they have discovered a chance to find fault. The managers of the Protective Association do not wish their flowers, however, now or hereafter, in the form of words, but in deeds and in co-operation in the mighty work undertaken. Have they not a right to ask this? Have they not a right to expect it?

When one has spent all the time which he should have given to rest and recreation for several years in unremitting toil for the accomplishment of a great and needed work, and in the belief that sooner or later he would be able to rally to his help the profession for which he labors, it does not give added zest or inspiration to the work to receive letters of which the one on page 240 is a fair sample. And yet, there is another side to the question. Letters of any description, even though they contain criticisms ten-fold more severe than those made in this letter, are preferable to the awful silence which has prevailed; for we can attribute the silence in reply to our numerous appeals for help and co-operation to but two causes—utter lack of interest, or, disapproval of our methods. Which is it? We have published the letter from Dr. Ross in full and our reply, not from any feeling of resentment whatever toward

the writer, but to call forth a general discussion of the work of the Protective Association, the Dental Supply Company and the DENTAL DIGEST. We thank our New England brother most heartily for "speaking out in meeting." He has been laboring under misapprehensions which will be removed by investigation. Let us have a full and free conference over these matters. If you approve of what has been done, say so and give us your support. If you disapprove, say so and tell us why. If there are questions upon which you wish to be enlightened ask them. One of the offices of the DIGEST will be to furnish an open field for the discussion of these and all other subjects of interest to dentists. Whom shall we hear from next?

AN EXPLANATION.

The editorial criticism in the April number of the *International Dental Journal* concerning the treatment of Dr. Truman's paper in the February number of the Dental Digest, we regard as entirely justifiable and are glad to make such reparation as is possible. We saw the proof of the article alluded to and struck out the objectionable portions, but to our surprise when the DIGEST was issued the expunged sentences had reappeared. We deprecate as such as our old and esteemed friend, Dr. Truman, possibly can, any unfair treatment of papers or the putting into the digests of papers the editor's own ideas. Our policy is to have all digests strictly impartial—to give in brief the writer's views upon the topic under discussion without comment; when editorial comment is deemed wise it will be made in the editorial columns. In the beginning we had difficulty in having this policy understood and carried out, but we are sure that if the readers will carefully note the March and April numbers of this journal, they will see that it has been strictly adhered to.

The charge of lack of moral courage in not publishing the name of the editor of the DIGEST is one of which we have never before been accused, and we believe it would not have been made now but for the counter-provocation which called it forth. We have long been of the opinion that a journal should be greater

than its editors—that it should be able to stand upon its merits and not upon the reputation of some individual as editor, for like Tennyson's brook—"men may come and men may go," but a journal should be strong enough to successfully withstand all changes. In this we are simply following a precedent already established by some of the leading magazines and journals of the country.

We regret exceedingly the article which called forth Dr. Truman's editorial and assure him and our readers that it is our intention that all papers shall receive fair and impartial treatment in the DIGEST.

THE AMERICAN DENTAL ASSOCIATION.

The Meeting of the American Dental Association takes place at Asbury Park the second Tuesday in August.

As is well known the literary work of the Association is done by the sections. These sections are:

Section 1, Prosthetic Dentistry, Metallurgy and Chemistry—R. M. Sanger, Chairman.

Section 2, Dental Education, Literature and Nomenclature—Louis Ottofy, Chairman.

Section 3, Operative Dentisty—Louis Jack, chairman.

Section 4, Histology and Microscopy—Frank Abbott, chairman.

Section 5, Materia Medica and Therapeutics—J. S. Cassidy, chairman.

Section 6, Physiology and Etiology—J. D. Patterson, chairman.

Section 7, Anatomy, Pathology, and Surgery—T. W. Brophy, chairman.

The work of the Association will be very much benefited if each society will make a condensed report of the important work that has been accomplished during the year and forward same to the chairman of the section to which it belongs. What they want is a condensed report of the literary work—that is to say, they do not wish to know how many members you have, nor who the officers are, but simply a brief report of the important work of each organization.

We publish under the head of notices a list of the questions selected by a committee by the American Dental Association, also a list of questions sent out since then by Dr. Louis Jack, chairman of section 3, on Operative Dentistry, who will be very glad to receive material for his report, and now is the time while societies are in session to select such material and forward it.

Book Reviews.

Transactions of the American Dental Association at the Thirty-third and Thirty-fourth Annual Sessions, held at Chicago, Ill., and Old Point Comfort, Va., commencing on the 12th of August, 1893, and the 7th of August, 1894.

Publication Committee: Geo. H. Cushing, E. T. Darby, A. W. Harlan.

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Transactions of the Midwinter Fair Dental Congress, held in San Francisco, commencing June 11, 1894.

Editorial Committee: J. D. Hodgen, W. A. Knowles, W. Z. King.

This book contains two hundred and seventy pages, is very neatly prepared, has some illustrations and charts, and many valuable articles, of which, from time to time, we will give digests.

Notices.

NORTH DAKOTA DENTAL SOCIETY.

The thirteenth Annual Meeting of the North Dakota Dental Society will be held in Fargo, May 15-16-17, 1895. C. L. ROSE, Sec'y., Fargo, N. Dak.

NEBRASKA DENTAL SOCIETY.

The twentieth annual meeting of the Nebraska Dental Society will be held at Norfolk, May 16, 17 and 18. A good program has been prepared, and a general invitation is extended to sister states. O. M. HUESTIS,

Cor. Sec'y., Nebraska City, Neb

THE NEW YORK COLLEGE OF DENTISTRY.

The twenty-ninth annual Commencement of the New York College of Dentistry was held in Chickering Hall, April 15, 1895. The degrees were conferred by Prof. Frank Abbott, M. D., Dean; the valedictory address was delivered by J. L. Chaim, D. D. S.; and the address to the graduates was made by G. R. Van de Water, D. D.

Students in attendance, 361; graduates, 81.

CHICAGO COLLEGE OF DENTAL SURGERY.

The thirteenth annual commencement exercises of the Chicago College of Dental Surgery were held in the Schiller Theatre, April 2, 1895. The degrees were conferred by T. W. Brophy, M. D, D. D. S.; the valedictory was delivered by C. J. Sowle; and the doctorate address made by A. H. Peck, M. D., D. D. S.

Students in attendance 300, graduates 106.

COMMENCEMENT OF VANDERBILT UNIVERSITY.

The commencement of the Dental Department of Vanderbilt University took place at the Univ. Chapel, February 28, before a full house. The charge to the class was made by W. H. Morgan, Dean; the valedictory upon the past of the class, delivered by D. S. Peach; and the degrees conferred by the Chancellor, J. H. Kirkland.

Students in attendance during the session, 136; graduated, 38.

NORTH CAROLINA DENTAL SOCIETY.

The twenty-first annual meeting of the North Carolina State Dental Society will be held in the city of Salisbury, N. C., on May 14, 15, 16, 1895.

A cordial invitation is extended to members of the profession.

The State Board of Dental Examiners will meet at the same time and place to examine all applicants for license to practice in the state.

J. E. WYCHE, Secretary.
Greensboro, N. C.

COMMENCEMENT OF OHIO COLLEGE OF DENTAL SURGERY.

The forty-ninth annual commencement of the Ohio College of Dental Surgery was held at the Odd Fellows' Temple Auditorium, Cincinnati, O., April 2, 1895. The degrees were conferred by James Leslie, D. D. S., of the Board of Trustees; the address to the graduates was made by Dr. W. O. Thompson, president of Miami University; and the class oration was delivered by C. E. Fitzpatrick, Wellston, O.

Students in attendance, 189; graduated 50.

NATIONAL ASSOCIATION OF DENTAL EXAMINERS.

It is earnestly requested of the presiding officers or secretaries of the Examining Boards throughout the States and Territories that they kindly forward to the National secretary the full list of officers with their respective addresses. In view of the large meeting expected at Asbury Park this coming August, the secretary desires to give every Board due notice in ample time and likewise to obtain a corrected list of officers to date.

CHARLES A. MEEKER, D. D. S., Secretary,
29 Fulton St., Newark, N. J.

CHICAGO DENTAL SOCIETY.

At its last monthly meeting, April 2, the Chicago Dental Society elected the following officers for the ensuing year:

Dr. W. V. B. Ames, president; Dr. C. E. Bentley, 1st vice-president; Dr. J. A. Dunn, 2nd vice-president; Dr. A. H. Peck, recording secretary; Dr. H. A. Costner, corresponding secretary; Dr. E. D. Swain, treasurer; Dr. H. A. Gunther, librarian; Drs. G. H. Cushing, J. N. Crouse and J. G. Reid, board of directors; Drs. D. C. Bacon, H. W. Sale, and E. R. Carpenter, board of censors; Dr. G. B. Perry, committee on exhibits.

A. H. PECK, Recording Secretary.

THE DENTAL SOCIETY OF THE STATE OF NEW YORK.

The 27th Annual Meeting of this Society will be held in Academy Hall, 42 N. Pearl Street, Albany, May 8, 1895.

The subject for the meeting will be "*Green-stain*," and divided as follows:

"The Etiology"—illustrated with lantern slides, etc., by Carl Theodore Gramm, M. D., Chicago, Ill.

"The Classification," W. C. Barrett, M. D., D. D. S., Buffalo, N. Y.

"The Therapeutics," S. B. Palmer, M. D. S., Syracuse, N. Y.

The Board of Censors will convene in the above hall at 9.00 A. M., Tuesday the 7th, for the examination of candidates for the degree of M. D. S.

CHARLES S. BUTLER, Secretary.

AMERICAN DENTAL ASSOCIATION QUESTIONS.

SECTION III., AMERICAN DENTAL ASSOCIATION,
1533 LOCUST ST., PHILADELPHIA, March 20, 1895.

Some weeks since, I sent to you as a member of Section III. of the American Dental Association, a request that you prepare a paper upon some subject which you may consider of interest to the profession.

I again write to you a remainder of this and of the importance of the Section making a creditable presentation of work at the next meeting in August.

Let me also suggest a careful consideration of the subjects herewith submitted, some of which are sent out by authority of the Association to be discussed by the various local Societies.

Clearly expressed views upon these questions, so discussed as to approach definiteness of conclusion, will make an advance towards the settlement upon rational and scientific grounds of these important matters.

Questions:

No. 1.—What is the surest treatment to secure root canal sterilization?

No. 2.—Which method of root canal filling furnishes the most complete obliteration of this space?

No. 3.—Is not operative dentistry liable to the same injury from the too prevalent use of plastic stoppings as occurred to prosthetic practice from the introduction of vulcanite?

No. 4.—Under what conditions should such temporary stoppings as gutta-percha and phosphate of zinc be employed, and what conditions justify the use of amalgams?

No. 5.—What procedures in implantation of teeth promise the best results?

No. 6.—What precautions are required, and what special procedures are necessary, when transplantation is practicable, where teeth are being destroyed by pyaemic conditions?

No. 7.—What is the most reliable treatment for acute sensibility of dentine?

No. 8.—When should the dental pulp be treated conservatively?

No. 9.—What precautions are required to secure the advantage of dental matrices (a) for plastics? (b) for gold? Yours truly,

LOUIS JACK, Chairman.

THE HORACE WELLS PERMANENT MEMORIAL.

UNDER THE AUSPICES OF THE AMERICAN DENTAL ASSOCIATION.

At the celebration of the 50th Anniversary of the discovery of Anæsthesia, held in Philadelphia, December 11, 1894, a resolution was passed directing the president of the American Dental Association to appoint a committee to take into consideration the erection of a suitable permanent memorial of Horace Wells, and to secure contributions toward a fund for that purpose. It is hoped to secure enough money to erect a bronze statue of Horace Wells in the National Capital. The details as to the style and character of the statue, as well as its definite location, will be decided upon at the next meeting of the American Dental Association, to be held at Asbury Park, N. J.

The committee calls your attention to this opportunity for doing an act of justice to the memory of a worthy member of our profession, whose discovery has been of such incalculable benefit to humanity and which has been so great an honor to our profession. Contribute whatever amount of

money you may feel able and willing to donate to the fund, and use your influence toward bringing the plan to a successful issue in a manner befitting the object.

Contributions may be sent direct to the treasurer, Dr. J. D. Thomas, 912 Walnut St., Philadelphia.

Dr. J. Y. Crawford, president of the American Dental Association, has appointed a central executive committee, consisting of the following gentlemen: Dr. James Truman, Dr. Wilbur F. Litch, Dr. S. H. Guilford, Dr. E. C. Kirk, Dr. J. D. Thomas, chairman. And in connection with the foregoing, a general committee, to consist of the presidents of all the dental societies of the United States. The object of this plan of organization is to secure the co-operation of the whole dental profession of America, through the personal interest of the presiding officers of the several dental societies, towards raising the necessary funds.

In accordance with the action of the president of the American Dental Association, and by virtue of the authority vested in him by the resolution adopted at the Horace Wells memorial meeting in Philadelphia, all presidents of societies are hereby appointed members of the general committee entrusted with the collection of funds for the purpose as above set forth.

ILLINOIS STATE DENTAL SOCIETY—GALESBURG, MAY 14-17, 1895.

PROGRAMME—ESSAYISTS.

1. Address by the President, J. W. Cormany, subject, The Saving of the First Tooth.

2. Dental Science and Literature, Dr. A. W. Harlan.

3. Dental Art and Invention, Dr. J. Frank Mariner.

4. Louis Ottofy, subject, A Review of the Transaction of the Illinois State Dental Society for a Quarter of a Century. Discussion opened by Dr. A. W. Harlan.

5. C. B. Rohland, subject, A Simple Method of Keeping a Daily Record. Discussion opened by Dr. T. W. Prichett.

6. D. M. Cattell, subject, Results of Experimental Root-Canal Fillings. Discussion opened by Dr. E. K. Blair.

7. C. R. Taylor, subject, The Human Tongue. Discussion opened by Dr. Garrett Newkirk.

8. W. V. B. Ames, subject, Combinations of Metals for Amalgams. Discussion opened by Dr. E. D. Swain.

9. C. C. Southwell (Milwaukee, Wis.), subject, Compressed Air in Dentistry. Discussion opened by Dr. W. H. Taggart.

10. A. W. McCandless, subject, The Duties of Dentist to Patient; The Duties of Patient to Dentist. Discussion opened by Dr. A. H. McCandless.

11. E. H. Allen, subject, The Illinois State Dental Society and the Relation it Sustains to the Dentists of Illinois. Discussion opened by Dr. C. N. Johnson.

12. C. R. E. Koch, subject, A Commentary on the Illinois Dental Statute of 1881. Discussion opened by Dr. T. W. Brophy.

The following questions will be submitted to the Society for discussion:

1. Can alveolo-dental abscess arise after complete sterilization and obliteration of the canal by an impervious filling and if so, from what causes?

Dr. G. V. Black will open the discussion.

2. What are the best means of diagnosis of pulp-calcification in its several forms; to what extent does the process demand treatment, and how shall it be treated, (*a*) with respect to its prevention, (*b*) remedially?

Dr. E. Noyes will open the discussion.

3. What is the most satisfactory antiseptic, and best method for root canal sterilization?

Dr. J. W. Wassall, will open the discussion.

4. Is not operative dentistry liable to the same injury from the too prevalent use of plastic stoppings as occurred to prosthetic practice from the introduction of vulcanite?

The discussion will be opened by Dr. W. A. Johnston.

Clinics will be given as follows:

1. L. E. Custer, (Dayton, O.), Electrical Fusing of Porcelain.
2. W. V. B. Ames, Gold Inlay.
3. A. E. Matteson, Porcelain Crown. Exhibit Furnace.
4. S. W. Lukin, Bridge. Using Logan Crowns and Gold Crowns for Posterior Abutment.
5. T. W. Prichett, Filling. Using Amalgam.
6. J. G. Reid, Enlarging Root Canals with Sulphuric Acid.
7. I. A. Lumpkin, Gold Filling in Disto-Proximal Compound cavity of Molar or Bicuspid.
8. Josephine D. Pfeifer, Gold Crown.
9. C. C. Corbett, Regulating Teeth with the Jackson Crib.
10. H. Logan, Cast Aluminum Plate.
11. L. W. Skidmore, Gold and Tin Filling in Bicuspid.
12. A. W. Harlan, Treatment of Pyorrhœa Alveolaris.
13. W. H. Taggart, Porcelain Bridge. Exhibit Electric Furnace.
14. Grafton Munroe, Management of Sodium and Potassium in Treating Putrid Pulp Canals.
15. G. E. Warren, Gold and Platinum Filling in Bicuspid or Molar.
16. W. W. Tobey, Immediate Separation and Filling of Incisor Teeth, Using Williams' Untrimmed Gold.
17. D. O. M. Le Cron, Porcelain Faced Crown, Giving in Detail the Method of Riveting the Same After the Gold Work is Finished.
18. G. H. Damron, Gold Filling. Sibley's Mat Gold.
19. C. N. Thompson, Will Make and Fit Downie Crown.
20. E. K. Blair, Root-Canal Filling.
21. F. H. McIntosh, Will Make and Fit Crown, Using the Ludwig Anchor.
22. H. R. Staley, The Use of Cements in Retaining Gold and Amalgam Fillings. Illustrated by Models.

LOUIS OTTOFY, *Secretary*,
Masonic Temple, Chicago.

A. H. PECK,
Chairman Executive Committee.

Obituary.

DR. JOHN J. R. PATRICK.

John J. R. Patrick, D. D. S., died at his home, 16 North Jackson street, Belleville, Ill., April 10, 1895. He had been sick for some time with dropsy, and his death was not unexpected.

The deceased was born in Liverpool, England, in 1828; his boyhood was passed in Ireland; and when about twenty years of age he came to America with his parents. He lived first in Iowa, then in St. Louis, where he began and completed the study of dentistry, and came to Belleville in 1859 and opened an office.

During the civil war he served as captain of Company G, 130th Illinois Regiment.

He was married twice. His first wife was a Miss Ross of Belleville, who died about five years ago; and his second, whom he married about three weeks before his death, was a Miss Anna Rischar, who had been his secretary and housekeeper.

He was successful in his business, and well and favorably known in his profession. He delivered special lectures to the students of the Missouri Dental College, the State University of Iowa, and other institutions. He was curator and a distinguished member of the U. S. Dental Association. He had a large collection of Indian relics, skulls, etc.; had contributed to the archives of the Smithsonian Institute; and was known outside the profession from his work on prehistoric crania, and the exploration of Indian mounds.

He was a member of Hecker Post, No. 443, G. A. R., and was buried under the auspices of that organization. His funeral was attended by several members of the dental profession from St. Louis and other places, and the community of Belleville were in attendance in numbers to testify to the love in which he was held.

News Summary.

For rent.—Dr. Cattell wants to rent a good operating room off from his reception room with privilege of same. $25.00 per month. 34 Monroe St.

Treatment of Leucomata of the Mouth.—Rosenberg refers to a case, which had resisted treatment for seven years, yielding to a few applications of a twenty per-cent. solution iodide of potash.—*Therap. Mon.*

A correction.—In the March DIGEST in a little item quoted from the Christian Register and entitled "Military Duty and the Professions," the statement was made concerning clergymen that 954 out of a thousand were unfit for military duty. It should have been 664.

Dr. K. L. Cleaves of Montpelier, Vt., relates a curious case which came under his notice. Upon a lady remarking that she must get herself a new set of teeth, her aunt offered her a celluloid plate in jest. The lady put it in her mouth and wore it for eight years, and when she came to Dr. Cleaves for a new plate, the suction was as good as the average, and the only reason she got a new plate was on account of her daughter's wedding.

A Sign of Hereditary Syphilis.—At the French Congress of Dermatology and Syphilography, M. Jullien mentioned a malformation of the jaws which seemed to him to be characteristic of hereditary syphilis. It consists in the projection of the upper jaw beyond the lower, either all around or only in front. He has observed this ten times; in nine cases it was connected with manifestly hereditary syphilis; the tenth case was simply suspicious.—*Revue Int. de Med. et Chir.*

Definition of a Blush.—A Cincinnati physician gives the following scientific definition: "A blush is a temporary erythema and calorific effulgence of the physiognomy, ætiologized by the perceptiveness of the sensorium when in a predicament of unequilibrity from a sense of shame, anger or other cause, eventuating in a paresis of the vaso-motor filaments of the facial capillaries, whereby, being divested of their elasticity, they are suffused with a radiance emanating from an intimidated præcordia."

Toothache.—R.

Dry Alcoholic Ext. Opium	8 grains.
Camphor.....	8 grains.
Balsam Peru	16 grains.
Mastic	16 grains.
Chloroform.....2½	drachms.

Introduced into the cavity, it calms the pain at once.—*Jour. de Pharm.*

Cologne Tippling.—According to *L'Union Medicale* this habit is increasing. Alcoholics, especially women, begin by taking a few drops of *eau de cologne*, and finally drink it by the glass. The writer seems to think this form of alcoholism may replace or cure the cocaine and morphine habits. The habit is exceedingly injurious, for in addition to the poorly rectified alcohols are the natural or artificial essential oils which are equally toxic. The practice is found among the upper classes principally.

Napoleon is being discussed and dissected from every standpoint, and why not from a dental standpoint? This is the description of his dental toilet given by a recent exhaustive and reliable biographer: "Having washed his face and hands, he picked his teeth very carefully with a boxwood toothpick, and then brushed them for some time with a brush dipped in opiate; went over them again with fine tooth powder, and rinsed his mouth with a mixture of brandy and fresh water. Lastly, he scraped his tongue with a scraper of silver, of silver-gilt, or of tortoise shell. It was to these minute precautions that he attributed that perfect preservation of all his teeth, which were beautiful, strong and regular. During the whole of his reign he never appears to have had recourse, except for scaling, to Dubois, his surgeon-dentist, borne on the list for 6,000 francs, and the recipient of a gold traveling case, the instruments in which were for the exclusive use of the Emperor."